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MONTANA WATER POLLUTION CONTROL PROGRAM PLAN

For

FEDERAL FISCAL YEAR 1979

(OCT. 1, 1978 Through SEPT. 30, 1979)

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Prepared by

WATER QUALITY BUREAU  
ENVIRONMENTAL SCIENCES DIVISION  
MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
HELENA, MONTANA 59601

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## INTRODUCTION

The state's goals with regard to water pollution are set forth in Section 69-4801, R.C.M. 1947 of the state's water pollution control act, which states in part:

- (1) *It is the public policy of this state to:*
  - (a) *conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses;*
  - (b) *provide a comprehensive program for the prevention, abatement, and control of water pollution.*

The Montana water pollution control program is in response to two laws--Section 69-4801 through 69-4827 of the 1947 Revised Codes of Montana and P.L. 92-500 (Federal Water Pollution Control Act Amendments of 1972) and which was subsequently amended by P.L. 95-217 in 1977 (The Clean Water Act). In the past, Montana's program has focused mainly at control of point sources (i.e., discharges from municipalities and industries), whereas in the future years, control of nonpoint sources (e.g., such as surface runoff from land carrying high sediment loads) will become a major focal point. A major effort on nonpoint source pollution control began in 1975 through federal funding of four areawide planning organizations to carry out local water pollution control management planning. Similar planning for the remainder of the state not included in the local planning areas began in 1977. The major responsibility for this statewide water pollution control management planning has been delegated to the Water Quality Bureau (bureau).

Both the state and federal laws impose a heavy workload on the bureau and the Environmental Protection Agency (EPA) personnel; and for this reason, priorities for programs must be established. Montana's program is in large part dictated by P.L. 92-500 and its program funding is about 75% federal.

To try to give better response to water pollution control and other environmental concerns relating to EPA programs, the EPA is establishing an office in Helena this year. This should lead to a more integrated program amongst the agencies and bureaus involved.

The program plan is an outline of the bureau's responsibilities, past program, five year strategy, and proposed program for fiscal year 1979 beginning October 1, 1978 (federal fiscal year). Hopefully, it will give the reader a view of what is happening and what is proposed in water pollution control and, further, that the reader will express his opinion and offer constructive criticism on the program.

## MONTANA'S WATER QUALITY PROBLEMS

Although point source pollution is still occurring in Montana, intensive management in the past few years has nearly alleviated the problem. Municipalities are now the major source of point source pollution. The State's wastewater discharge permit program and EPA's construction grant program should alleviate the municipal inadequacies in the next few years.

Today, Montana's most significant water quality problems are nonpoint contributions of sediment and salts and reduction of stream flows. While natural processes contribute to these problems, human activities are a primary cause. Although any action which disturbs the land's surface and/or uses large quantities of water can potentially degrade water quality, activities associated with agriculture, mining, urban development, and silviculture are presently the most important nonpoint pollutant sources in Montana.

Since more than 80% of Montana is used for some agricultural endeavor, the magnitude of that industry's impact on water quality should be no surprise. Much degradation could be feasibly avoided, but rapid technological advances and societal demands have exceeded changes necessary in land management practices to control water quality impacts. Of the agriculture-related water quality problems, excessive removals of surface water for irrigation, salinity increases in ground and surface water, and sediment increases in surface water are the most critical.

Average total annual supply of surface water in Montana is estimated to be 44 million acre-feet. Total consumption averages about seven million acre-feet annually; irrigation accounts for more than 80% of this loss, or about six million acre-feet a year.

Although supplies are generally adequate in most basins, locally intense irrigation severely reduces in-stream flows. Dewatering has been most noticeable in the Beaverhead, Bitterroot, West Gallatin, Big Hole, and Jefferson Rivers, but many other stream segments are also affected annually. Preliminary fishery resource value data, being compiled by the Montana Department of Fish and Game, have identified 285 stream segments throughout the State where excessive irrigation withdrawals adversely affect fish populations at some point; total length of those problem segments is 4700 miles. The conservation district inventory for the Statewide 208 project identified 873 miles of streams with severe annual irrigation dewatering.

The degree to which any given stream is affected by dewatering is determined by its pre-existing quality, amount of water removed, length and time of year of withdrawal, and value of that stream. A dry, small stream is certainly more dramatic than reduced flow in a major river, but if that river happens to be one of Montana's "Blue Ribbon" trout streams, actual negative impacts may be greater. Montana's "Blue Ribbon" streams are important not only for their outstanding fishing, but as abundant sources of high quality water for all other beneficial uses. These streams are so important that, if Montana does nothing else but protect these segments from dewatering, a major water quality accomplishment will have been achieved.

Agriculture-related salinity impacts are caused by irrigation water returned to streams, ground-water re-charge by percolation of salt-laden irrigation water, and saline seep drainage.

Some irrigation returns carry excess salts, sediments, and/or nutrients. The Fish and Game inventory has so far identified 87 stream segments where irrigation flows have reduced fishery resource values; total length of those segments is 1700 miles. In regard to percolation of irrigation water, the Statewide 208 conservation district inventory identified 58,000 irrigated acres showing increased salinity.

A more insidious impact is that of saline seep on ground water. About 200,000 acres in Montana are being damaged by saline seep, and recent studies indicate that saline seep is increasing at an alarming rate. Much of the problem is caused by crop-fallow farming compounded by increasing conversion of rangeland to cropland. USDA figures show 1,005,000 Montana acres were converted to cropland between 1974-1978.

With increasing public demands on ground-water supplies, correction of existing problems and protection of high quality aquifers is extremely important. Recovery of aquifers affected by saline seep, however, will be slow at best, and preliminary studies suggest that saline seeps are contaminating regional as well as local aquifers.

The most ubiquitous water quality problem in Montana is excessive sediment. Although geological processes contribute sediment, human activities increase the production and accelerate the delivery of sediment to Montana's streams.

In Montana, the major sediment-producing activities are agriculture, urban development, silviculture, and mining. Again, by virtue of its magnitude, agriculture accounts for most sediment production. Irrigation return flows and wind and water erosion remove soil from rangeland/pasture and cropland and deposit it in surface waters.



The problem is extensive. In the Statewide 208 area alone, the conservation district inventory indicated that 3,700,000 acres of dry cropland, 4,900,000 acres of rangeland/pasture, and 144,000 acres of irrigated cropland are experiencing some degree of water erosion. Another 116,000 acres of rangeland/pasture and 1,800,000 acres of cropland are contributing sediment to water through wind erosion. The survey also identified 1,108 miles of stream banks that are being eroded by grazing or tillage. In addition to the 87 stream segments in the State being adversely affected by irrigation return flows, the Fish and Game survey has identified 364 segments (5,600 miles) which are experiencing sediment increases at some point due to channel alteration, bank encroachment, and stock overuse.

Other major land uses also contribute significant amounts of sediment to receiving streams. In addition to nutrients, minerals, and heavy metals, urban stormwater runoff can deposit large quantities of sediment in surface waters. Smaller Montana towns make negligible contributions in this respect, but contributions from larger cities are significant.

About 23 million acres of Montana are forested; 14 million acres are considered commercially valuable. Although logging of federally and corporately owned forests does degrade surface water to some extent, those operations are usually managed with the intent of reducing adverse environmental impacts. However, a major portion of Montana's forests, about 3.1 million acres, are owned by non-corporate land holders. Since there is no comprehensive program to control water pollution during timber harvest on these lands, small logging operations are a major water quality problem. Timber harvest rates are expected to increase in Montana, particularly on non-corporate owned lands. Without strong silviculture management programs, future harvests could result in substantial water quality degradation.

Although 133 water polluting mining operations have been identified in the Statewide 208 area alone, the extent of mining throughout the State and its degree of impact is not fully known. Smaller mining operations, more numerous and less carefully scrutinized than larger, more obvious mines, are and will continue to be major, local sources of water pollution. With increasing mineral prices, technological advances, and consumer demands, the potential for increased development of Montana's minerals is great.

Added to those major water quality problems are many other land uses, such as waste disposal, construction, and recreational pursuits, which also degrade water quality. Though the impacts of each may be minor by comparison, their cumulative effect is significant.

Correction of Montana's water quality problems is a substantial challenge not only to water quality managers, but to Montana's citizens. It is the citizen who must ultimately decide how much degradation is acceptable and where trade-offs will be made. However, problem correction may appear easy compared to prevention of extensive future degradation in light of the rising demands on Montana's resources. The Water Quality Bureau is dedicated to assisting Montana in meeting these challenges.

## SURFACE WATER QUALITY STANDARDS

### 1. State Legislation

Section 69-4808.2, R.C.M. 1947 outlines the duties of the Board of Health and Environmental Sciences with respect to Montana's water pollution control laws. The first portion of subsection (1) of Section 69-4808.2 states:

*The board shall:*

- (a) *Establish and modify the classifications of all water in accordance with their present and future most beneficial uses.*
- (b) *Formulate standards of water purity and classification of water according to its most beneficial uses, giving consideration to the economics of waste treatment and prevention.*
- (c) *Review from time to time, at intervals of not more than three (3) years, established classifications of water and standards of water purity and classification as follows:*
  - (i) *in revising classifications or standards or in adopting new classifications or standards, the board may not so formulate standards of water purity or classify any state waters as to lower any water quality standard applicable to state water below the level applicable under the classification or standards adopted except upon a finding that a particular state water has been classified under a standard or classification of water quality that is higher than the actual water quality that existed at the time of classification and only if the action is taken pursuant to 69-4814.*
  - (ii) *The board shall require that any state waters, whose existing quality is higher than the established water quality standards, be maintained at that high quality unless it has been*

*affirmatively demonstrated to the board that a change is justifiable as a result of necessary economic or social development and will not preclude present and anticipated use of these waters; and*

- (iii) The board shall require any industrial, public, or private project or development, which would constitute a new source of pollution or an increased source of pollution to high quality waters, referred to in subsection (1)(c)(ii), to provide the degree of waste treatment necessary to maintain that existing high water quality.*

## 2. Review of Past Program

MAC 16-2.14(10)-S14480 WATER QUALITY STANDARDS is an administrative rule adopted by the Board of Health and Environmental Sciences which contains water-use classifications for all of Montana's surface waters and the water-use descriptions and water quality criteria for each classification. The water quality criteria contained in the standards define the minimum water quality conditions and waste treatment requirements needed in order to protect, maintain, and improve the quality and potability of the state's surface water. The water-use descriptions and water quality criteria for nearly all of Montana's rivers and streams provide protection of the quality of the surface water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses.

Following proposed revisions by the bureau and the State Water Pollution Control Advisory Council (WPCAC), a public hearing was held by the Board on March 10, 1978. The primary changes proposed were:

- (a) Numerical limits on additional parameters;*
- (b) A non-degradation policy which would allow the department to take certain actions without receiving prior board approval;*
- (c) A chlorination policy on treated sewage discharges; and*
- (d) Changing classifications on a number of streams in eastern Montana to more accurately reflect their "natural" water quality.*

Numerous comments were received including several requests for an environmental impact statement (EIS). The board requested that the bureau prepare an EIS before the board further considered the standards. The bureau to date has had little opportunity to comply with this request because the personnel that will be involved in the standards revision and EIS have been concentrating their efforts on the Poplar River International Joint Commission (IJC) water quality assessments.

3. Five Year Strategy

It is the intent of the bureau to review on a continuing basis the water quality standards; to have them reviewed at least every three years by the WPCAC; and to submit revisions to the board where the need for change is shown.

4. Proposed FY '79 Plan

It is expected that the IJC work will be tapering off during October and the bureau can begin to renew their efforts on standards. In order to proceed more rapidly, the bureau plans to do some contracting on this work. It is estimated that an expenditure of about \$75,000 will be needed for actual bureau and contract work. The following schedule is proposed:

- (a) *Complete review of statements submitted on first revision and complete EIS - May, 1979;*
- (b) *Complete review of EIS comments - July, 1979;*
- (c) *Board hearing on water quality standards - September, 1979.*

It is not known the actual date the board will adopt revisions. It could be at the September board meeting.

It is planned to incorporate any new requirements of EPA's in the revised standards. New EPA guidelines are expected early in FY '79.

## MUNICIPAL CONSTRUCTION GRANTS

### 1. Past Program

With passage of the Water Pollution Control Act Amendments of 1972, it became mandatory for all municipal wastewater discharges to receive a minimum of secondary treatment. Montana's Water Quality Standards previously required secondary treatment; however, no specific limits were established to define secondary treatment.

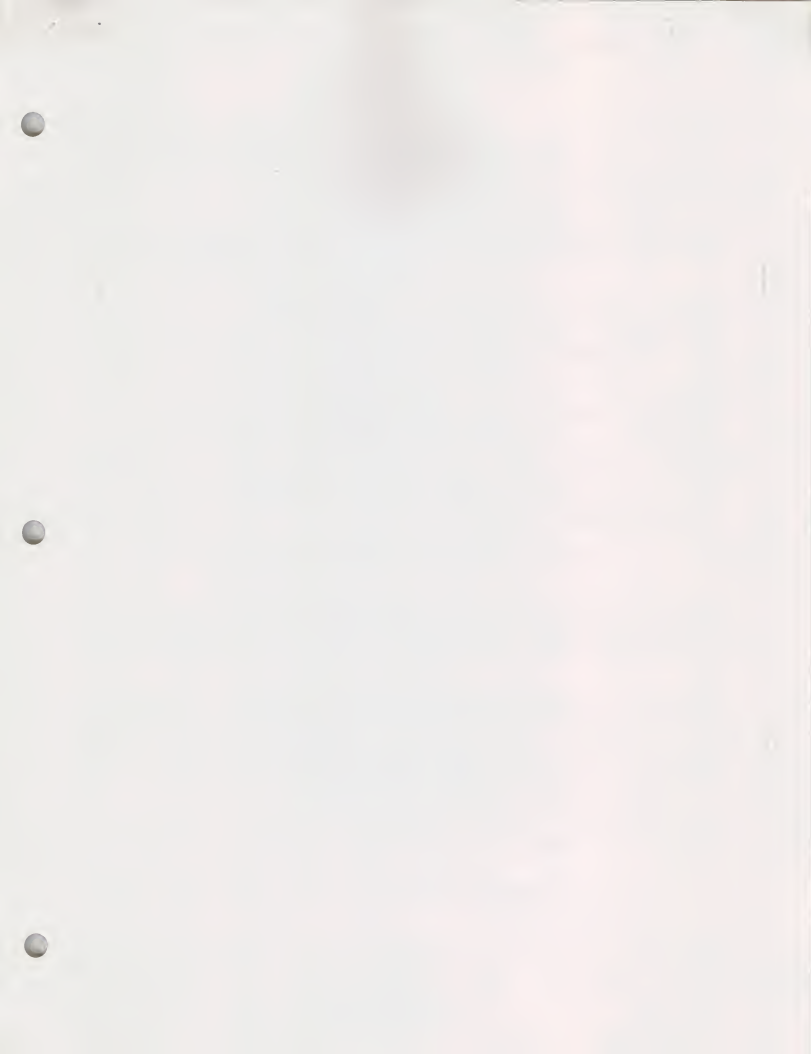
To assist communities in achieving the goal of meeting secondary treatment requirements, the federal act appropriated \$18 billion for the construction grant program. Of the total, Montana received \$3,324,000 in FY 1973, \$4,986,000 in FY 1974, \$7,534,600 in FY 1975, and \$12,378,200 in FY 1976. During FY 1977, \$3,024,000 were provided through the Public Works Act (PL 94-447) and supplemental congressional funding of \$3,272,000. PL 95-217, allotment for Montana, was \$15,624,000 for FY 1978.

Construction grant funding amounting to 75% of eligible costs is made available to communities needing new or improved treatment facilities, sewage collection systems, interceptor sewers, and for correction of infiltration/inflow problems. Since the needs in Montana outweigh the available funds, a priority system for fund allocation is utilized. Montana's priority system considers sewage treatment to be of the highest priority, except in cases where there is an extreme public health hazard.

Using this priority system, a priority list containing all projects voicing a need is developed at least annually. Grant monies are then obligated to the top communities on the list until the annual allocation is expended.

The grant process is divided into three steps. Step 1, called facilities planning or Section 201 planning, is a detailed planning effort aimed at providing a recommended solution to the particular problems of the community in question. Included in this plan is an analysis of the existing sewer system and treatment facility, a probe of the town's anticipated development and growth trends, a comparison of the economics and effectiveness of all available treatment alternatives, and an environmental assessment of the solutions. Finally, by compiling all of the above information and comparing advantages and disadvantages, a recommended solution is given. If the plan receives the approval of the reviewing governmental agencies, the grant may be amended to provide for Step 2 expenses.

Step 2 concerns itself with the actual design or preparation of plans and specifications of the selected treatment system. Following governmental review and approval of the plans and specifications, the grant may be amended again to provide for Step 3 expenses. The majority of the project costs are associated with this step--construction.



The SMA plan will outline the procedures to be used to reach total delegation by FY 80. Initial delegation is to occur during FY 79 with increasing degrees of delegation occurring at approximately 6 month increments. The state will be training existing personnel and hiring additional personnel to assume the delegated responsibilities.

Table 1 shows how and when existing personnel will be transferred from the 106 and 208 grants to the 205(g) grant. Table 1 also shows how staffing will be increased to accept increasing degrees of delegated responsibility.

Table 1 . Construction Grants Staffing (in man years)

Grant/FY Qt.	FY79				FY80			
	10/1	1/1	4/1	7/1	10/1	1/1	4/1	7/1
106	3.5							
208	1.5							
205(g)*		5.0	6.0	7.0	8.0	**	**	**
TOTAL	5.0	5.0	6.0	7.0	8.0			

\*these figures are estimates--they will be refined when working up Montana's SMA grant

\*\*estimations not made, however, increased staffing is proposed

The state will make an effort to continually demonstrate to EPA that they can adequately manage all delegated responsibilities in a manner that will improve the efficiency of the construction grants program. This will be done in addition to expediting projects and giving grantees more project management assistance.

The state will progressively increase its efforts to provide increased public participation in the construction grants program. A full-scale public participation program will be developed for complex projects, while an abbreviated public participation program will be used for the less complicated projects. This public participation program will be developed in accordance with the federal guidelines soon to be promulgated.

### 3. Proposed FY 79 Program

The bureau has established the following goals for the construction grants program:

1. assume the maximum degree of delegated responsibility of the construction grants program using SMA;
2. provide the communities (grantees) with more efficient project progression;
3. increase public participation in the overall construction grants program.



4. provide better operation and maintenance assistance to reduce start-up and operational problems; and
5. provide training and additional staffing as necessary to meet the state/EPA agreement.

The bureau is developing its project scheduling list around the assumption that it will receive an appropriation of \$15,624,000 for FY 79. The priority system is being revised to meet all requirements of PL 95-217.

Table 2 shows the sources of funds available for the construction grants program during FY 79. Upon completion of the revisions of the priority system and notification is received of the revision of FY 79 appropriation, a project scheduling list will be developed. The proposed priority system and fundable and extended priority lists will be sent to the state's municipalities for review and a public hearing will be held on them before submittal to EPA for their approval.

Table 2 . Construction Grants Funds Available

Qtr.-F.Y./Appropriation	FY 77		FY 78	FY 79	Total Funds Available
	PL 94-447	Supplemental Appropriations			
	\$3,024,000	\$3,272,000	\$15,624,000	\$15,624,000*	
1st Qtr.-78, 12/30/77	3,024,000	2,600,641			5,624,641
2nd Qtr.-78, 3/30/78	3,024,000	1,775,626			4,799,626
3rd Qtr.-78, 6/30/78	3,024,000	1,581,256	14,756,475		19,361,731
4th Qtr.-78**, 9/30/78	3,024,000	1,581,256	12,776,259		17,381,515
1st Qtr.-79				15,624,000	
2nd Qtr.-79					
3rd Qtr.-79					
4th Qtr.-79					

\*assumed

\*\*aso fo 7/31/78

## MUNICIPAL OPERATIONS

### 1. Past Program

An integral part of municipal sewage treatment is adequate operation and maintenance of the facilities after construction is completed. It does little good for communities to spend millions of dollars for treatment facilities only to have them improperly operated and maintained with poor treatment the net result.

For many years, the department has conducted an inspection program for municipal sewage treatment facilities in conjunction with water supply inspections. For the most part, this has consisted of an annual visit to the treatment site by an engineer in the presence of the responsible treatment plant operator. Technical assistance was provided by the department engineer when specific problems were observed during inspections.

In an effort to further improve operation and maintenance, the bureau, in cooperation with Montana State University at Bozeman, has conducted a water and wastewater treatment operator school each year. During recent years, this school has been extended from two and one-half days to five days. About 80 operators attend each year.

In 1971, an operators' newsletter, which is published three times per year, was initiated in cooperation with the Montana Section of the American Water Works Association and the Water Pollution Control Association. The newsletter provides information on events occurring around the state concerning water and wastewater facilities, relates experiences of other operators, providing solutions to specific problems and provides information on new laws and regulations affecting the operator's community.

About six one-day operator seminars per year have been held around the state during recent years. The seminars provided information on permits, the new "Safe Drinking Water Act", operator certification, and other topics of immediate interest.

During recent years, the bureau and Laboratory Division conducted at least one week-long laboratory personnel training session per year for municipal and other personnel doing self-monitoring analyses for municipalities. Many of the personnel trained in this program are just starting to do laboratory work.

During the past several years, videotape programs for operators have been utilized in most of the larger plants and other areas where several operators were willing to get together. Several of the operators have taken correspondence courses from Sacramento State College.

In FY 78, 11-week training courses were held at Great Falls, Shelby, Miles City, Sidney and Wolf Point. These courses consisted of one evening of classroom instruction each week on both water supply and wastewater treatment.

## 2. Five Year Strategy

Considerable effort will be expended in assisting operators to overcome operational problems at new mechanical secondary treatment plants. In order to meet the effluent limits already established or which will be established, the plants will need to be operated at high efficiencies at all times. The bureau has two experienced operators working in the construction grant program and these personnel will be utilized as needed for reviewing O & M manuals and assisting operators.

With new mechanical secondary treatment plants coming on line, there will be a need for about 15 new operators. Existing operators at these plants will also need advanced training to operate the secondary treatment facilities. The major training effort will be devoted towards these new facilities. The videotape program appears to have the greatest potential for reaching the greatest number of operators at these facilities. As the program further develops, there should be better tapes available for this purpose which should provide a more effective program.

One, and possibly two, specialized training courses for those doing self-monitoring will be held each year. It is also planned to have a specialized training course each year for municipal personnel who are responsible for controlling activated sludge secondary sewage treatment systems.

One-day seminars will continue as they provide operators training where municipal government travel budgets limit or prohibit attendance at a centralized training course. Two and three-day seminars will also be tried, and if successful, will be further utilized. The five-day school at Bozeman will continue to be held for those desiring to receive more intensive training. Additional 11-week seminars will be held when interest is high enough in areas to warrant them. A tape-slide program will be provided to those in isolated locations and who wish to receive training at home. The newsletter will be continued and will be sent to all operators.

The bureau will cooperate with other state agencies in obtaining a training facility under Section 109 of PL 92-500. A facility plan is presently being developed.

The operator certification program will be continued and expanded to include a greater number of the private facilities. A periodic review and revision of examinations will be made to make them more applicable to an operator's particular plant. There are presently over 900 operators in the state who are certified.

### 3. Proposed FY 1978 Program

The annual water and wastewater school will be held at Bozeman, November 13-17, 1978. The newsletter to operators will be continued with three issues expected to be published. Six one-day seminars for water and wastewater operators are planned. Five 11-week training courses will be held. The videotape program will be reevaluated to determine if a better program can be put together.

The following summarizes anticipated operator training activities:

Operators attending and completing 11-week training course -	60
Operators attending annual school -	80
Operators attending one-day seminars -	150
Operators completing home study courses -	10
Operators completing laboratory course -	15
Operators completing activated sludge course -	20
Operators receiving specific on-the-job training -	<u>10</u>

Total - 345

The following summarizes the need for new municipal sewage treatment plant operators for fiscal year 1979.

New construction -	5
Staff increases -	5
Replacement -	<u>50</u>

Total - 60

The operator certification program will continue with administration of the program provided by the bureau and guidance provided by an advisory board established by law. Examinations will be given twice during the year for all classes, while examinations for the lower two classes will be given throughout the year. It is expected that about 200 examinations will be given for all classes. Rewriting of some of the examinations will be accomplished.

A formal training program has been established by North Montana College at Havre to train technicians for water and wastewater facilities. The bureau will assist the College as much as possible.

## WASTE DISCHARGE PERMITS

### 1. State Legislation

Section 69-4806, R.C.M. 1947 states in part:

*It is unlawful to:*

- (2) *carry on any of the following activities without a current permit from the department:*
  - (a) *construct, modify, or operate a disposal system which discharges into any state waters;*
  - (b) *construct or use any outlet for the discharge of sewage, industrial wastes, or other wastes into any state waters;*
  - (c) *discharge sewage, industrial wastes, or other wastes into state waters;*
- (3) *violate any provisions set forth in a permit or stipulation, including but not limited to limitations and conditions contained therein;*

Section 69-4809.1, R.C.M. 1947 states in part:

(1) *The department shall:*

- (a) *issue, suspend, revoke, modify, or deny permits to discharge sewage, industrial wastes, or other wastes into state waters, consistent with rules made by the board;*
- (b) *examine plans and other information needed to determine whether a permit should be issued or suggest changes in plans as a condition to the issuance of a permit;*
- (c) *clearly specify in any permit any limitations imposed as to the volume, strength, and other significant characteristics of the waste to be discharged;*

## 2. Review of Past Program

Montana assumed administration of the NPDES program in 1974 and began issuing MPDES (Montana Pollutant Discharge Elimination System) waste discharge permits on June 10, 1974. The MPDES program replaced the State's 1968 and 1972 permit programs for sanitary sewage and industrial waste discharges and confined animal feeding operations, respectively.

## 3. Five Year Strategy

The department intends to have all major dischargers and all minor dischargers under MPDES permit during this period. These consist of about 26 major municipal, 100 minor municipal, about 15 major non-municipal (industrial), 80 minor non-municipal (bridge construction projects and industrial), 65 agricultural and fish farming, and 12 water treatment plant dischargers.

The department will undertake an active compliance inspection program during the period. Emphasis will be placed on obtaining compliance with permit conditions by all major dischargers. A compliance inspection of a waste treatment facility will be in the form of a compliance monitoring inspection, reconnaissance inspection, sampling inspection, operation and maintenance inspection, or technical assistance demonstration.

A compliance monitoring inspection will consist of completing EPA form 3560-3.

A reconnaissance inspection is a brief visit with a permittee made for at least one of the following purposes:

- (a) observe status of construction required by a permit;
- (b) assess adequacy of the permittee's self-monitoring program;
- (c) check records; or
- (d) discuss permit requirements and give advice when appropriate on how to meet requirements.

All major dischargers will receive a compliance monitoring inspection at least annually. In addition, either sampling inspections, reconnaissance inspections or operation and maintenance inspections will be conducted at all major municipal facilities as well as most of the minor municipal facilities during each fiscal year. In addition, sampling

inspections will be conducted on a few selected minor municipal dischargers. Emphasis will be placed on those discharges with wastewater treatment facilities considered to be capable of, or marginally capable of, meeting the national secondary treatment standards.

The department will attempt to review the periodic self-monitoring information received by the department in a timely manner and prepare for eventual inclusion into a computerized data storage system. The self-monitoring information will be reviewed during the scheduling of compliance monitoring activities, and those dischargers that appear to be violating the effluent limitations of their MPDES permits will be monitored for compliance as discussed above.

It is the goal of the department to insure best practicable control technology and best available control technology effluent limitations are met by all non-municipal dischargers following July 1, 1977, and by July 1, 1983, respectively, as required by the act and further defined by EPA regulations. It is also the goal of the department to achieve no discharge of pollutants to State waters by July 1, 1985.

#### 4. Proposed Fiscal Year 1979 Program

The department intends to: (1) process all MPDES permit applications received, and (2) renew, during fiscal year 1979, all permits that expire during fiscal year 1979 including permits for federal facilities pursuant to Sec. 313 of P.L. 95-12. Permits expiring the first quarter of fiscal year 1980 also will be processed during this fiscal year.

The department does not expect to receive any new municipal permit applications during fiscal year 1979. However, renewal of eight expiring major municipal and forty-two minor municipal permits is anticipated. Renewal of six major industrial, twenty-three minor industrial, twenty-three agricultural and four federal fish hatchery permits also is anticipated.

Applications for new permits are not expected to exceed forty-five (including twelve feedlots, ten placer mining, ten construction and five fish farming operations). Processing of irrigation return flow applications will be delayed until EPA regulations are finalized. Most of the State's irrigation return flows probably will be covered by general permits.

The department will undertake an active compliance inspection program during FY 1979. Compliance monitoring inspection form



EPA 3560-3 will be completed at least once for all major discharges. All of these are scheduled for the last quarter of FY 1979.

In addition, the department will make operation and maintenance (municipal dischargers only), reconnaissance, and sampling inspections. Operation and maintenance inspections will be made on at least twenty major municipal and thirty minor municipal facilities where an EPA form 7500-5 or equivalent State form (lagoons only) will be completed. Operation and maintenance inspections may be made concurrently with the compliance monitoring inspection. Sampling inspections (for permit compliance and self-monitoring checking) may be conducted concurrently with compliance monitoring inspections. All major industrial discharges will be sampled at least twice; ten major municipal discharges will be sampled at least once. The remaining major municipal dischargers will be either reconnaissance or operation and maintenance inspected. Other minor dischargers will be inspected as manpower and time permits.

The department will strive to improve its programs for:  
(1) timely review and utilization of self-monitoring reports and (2) tracking of compliance schedule progress.

Priorities in the permit program are:

- (a) Appropriate toxic limitations will be incorporated in new MPDES permits and permits to be reissued in the second-round revision. Specifically included will be the requirements of BAT effluent guidelines and new source standards being developed for the twenty-one primary industrial categories for sixty-five classes of toxic pollutants.
- (b) Major permits will be strictly enforced including prompt enforcement action for MPDES permit violations which result in discharge of toxic pollutants.
- (c) Requirements for pretreatment programs in municipal MPDES permits will be incorporated in new and renewed permits.
- (d) Incorporation of best management practices for the control of toxic runoff, spills and sludge disposal will be initiated in industrial permits.

- (e) Municipal permits which reflect revised effluent standards for sewage treatment lagoon discharges will be issued where applicable.
- (f) Municipal permit extensions will be issued under section 301 (i) (1) of the Clean Water Act.
- (g) Self-monitoring reports will be reviewed as outlined above.

Additional personnel are needed for a more effective permit program, particularly in the areas of seeking dischargers who are not applying for permits, doing detailed field investigations and evaluations of new discharge applications, and in preparation of PER's and EIS's required by MEPA.

Provision of an EPA engineer to work with the Helena office staff has been of great assistance to the program and has helped greatly in coordinating the program with EPA.

Major non-municipal and municipal discharger lists are attached as Tables 3 and 4 , respectively.

TABLE 3. MAJOR MUNICIPAL DISCHARGERS

<u>Discharger</u>	<u>Permit No.</u>	<u>Basin</u>
City of Bozeman	MT-0022608	Upper Missouri
City of Dillon	MT-0021458	Upper Missouri
City of Missoula	MT-0022594	Lower Clark Fork
Silver Bow Metro SID #1	MT-0022012	Upper Clark Fork
City of Hamilton	MT-0020028	Upper Clark Fork
City of Deer Lodge	MT-0022616	Upper Clark Fork
City of Kalispell	MT-0021938	Flathead
City of Columbia Falls	MT-0020036	Flathead
City of Polson	MT-0020559	Flathead
City of Whitefish	MT-0020184	Flathead
City of Billings	MT-0022608	Upper Yellowstone
City of Livingston	MT-0020435	Upper Yellowstone
City of Laurel	MT-0020311	Upper Yellowstone
City of Great Falls	MT-0021920	Missouri-Sun-Smith
City of Helena	MT-0022641	Missouri-Sun-Smith
City of Havre	MT-0022535	Milk
City of Glasgow	MT-0021211	Milk
City of Miles City	MT-0020001	Lower Yellowstone
City of Baker	MT-0022381	Lower Yellowstone
City of Glendive	MT-0021628	Lower Yellowstone
City of Libby	MT-0020494	Kootenai
City of Hardin	MT-0020834	Middle Yellowstone
City of Conrad	MT-0020079	Marias
City of Cut Bank	MT-0020141	Marias
City of Lewistown	MT-0020044	Middle Missouri
City of Wolf Point	MT-0020532	Missouri-Fort Peck

TABLE 4. MAJOR NON-MUNICIPAL DISCHARGERS

<u>Discharger</u>	<u>Permit No.</u>	<u>Basin</u>
The Anaconda Company	MT-0000493	Missouri-Sun-Smith
Phillips Petroleum Co.	MT-0000434	Missouri-Sun-Smith
The Anaconda Company	MT-0000183	Upper Clark Fork
The Anaconda Company	MT-0000191	Upper Clark Fork
Hoerner Waldorf Corp.	MT-0000035	Lower Clark Fork
J. R. Daily	MT-0000094	Lower Clark Fork
Great Western Sugar	MT-0000281	Upper Yellowstone
Burlington Northern, Inc.	MT-0000388	Upper Yellowstone
Farmers Union Central Exchange	MT-0000264	Upper Yellowstone
Continental Oil Company	MT-0000256	Upper Yellowstone
Exxon	MT-0000477	Upper Yellowstone
Montana Power Company	MT-0000396	Upper Yellowstone
Holly Sugar Company	MT-0000248	Lower Yellowstone
Montana-Dakota Utilities	MT-0000302	Lower Yellowstone
St. Regis Paper Company	MT-0000221	Kootenai

## DREDGED OR FILLED MATERIALS DISCHARGE PERMITS

### 1. Past Program

Section 6(g) of the state's Water Quality Standards (MAC 16-2.14 (10)-S14480) states:

- (g) *No wastes are to be discharged and no activities conducted which either alone or in combination with other wastes or activities, will cause turbidities to exceed those allowed by specific water quality criteria; provided, short-term activities necessary to accommodate essential dredging, channel or bank alterations, stream diversions or other construction where turbidities in excess of the criteria are unavoidable, may be authorized by the Department under conditions as it may prescribe.*

In 1974, the Water Quality Bureau implemented Section 6(g) and began review of proposed construction activities causing unavoidable increases in turbidities exceeding the water quality criteria. Section 6(g) was adopted to permit essential construction activities where short-term increases in turbidities would occur without them violating the specific water quality criteria. Restrictions or limitations can be imposed on authorizations to abate or minimize resulting turbidity increases.

In 1975, the legislature passed Senate Bill 310 known as the Streambed and Land Preservation Act of 1975. The Act prohibits unauthorized projects causing physical alterations or modifications of streams and establishes a review team to evaluate proposed projects. The review team determines if a proposed project is necessary and whether adequate safeguards are taken to protect the integrity of the stream and to minimize soil erosion and sedimentation; thereby protecting water quality and adjacent lands. The review team consists of a member of the District Supervisors, a representative of the Department of Fish and Game, and the applicant. Authorization from the District is required prior to commencement of a project.

To eliminate duplication of effort and still comply with the Water Pollution Control Act and Water Quality Standards, the Department has entered into an agreement with the Department of Fish and Game that they review all 310 projects with respect to compliance with provisions of the water pollution control laws and Section 6(g) (i.e., if turbidities above the water quality criteria are exceeded, or conditions and limitations prescribed by the team are adequate

to protect long-term in-stream water quality standards). Necessary projects where turbidity and law violations would occur would be "tagged" or referred to the Water Quality Bureau for Section 6(g) authorization considerations. Authority for this cooperative agreement appears to be provided by Section 69-4827 which states:

*The council, board, and department may require the use of records of all state agencies and may seek the assistance of such agencies. State, county, and municipal officers and employees, including sanitarians and other employees of local department of health, shall cooperate with the council, board, and department in furthering the purposes of this chapter, so far as is practicable and consistent with other duties.*

The Corps of Engineers pursuant to Section 404 of Public Law 92-500 has responsibility to regulate discharge of dredged or fill materials for those coastal and inland waters and wetlands which have a flow exceeding five cubic feet per second or five surface acres in size.

The Water Quality Bureau under this program is to provide certification that water quality standards and applicable effluent standards will be met after the best engineering and conservation practices have been utilized before the project is permitted by the Corps (Section 401 of Public Law 92-500). The certification may be waived by not acting on the certification within a reasonable time period.

## 2. Five Year Strategy

Since the Corps of Engineers has the responsibility for streams, lakes and impoundments up to the previously mentioned flow and acreage limitations duplication of effort will occur between the Section 6(g) authorization, the state's stream preservation acts, and Section 401 of Public Law 92-500.

To eliminate this duplication of effort the Department has entered into the previously mentioned agreement with the Department of Fish and Game and a joint Public Notice (PN) with the Corps. As was mentioned, the Department of Fish and Game will handle all 310 projects and only notify the Department when the necessary or "tagged" project would violate the Water Quality Standards. The Department would review the "tagged" project when the joint PN was issued on the project. The Department issues a joint PN with the Corps so the application no longer needs to ask the Department for a 401 certification. It is requested through the joint PN.

If the project has been "tagged" by the Department of Fish and Game as a necessary project that will have a water quality impact or falls outside of the Corps jurisdiction, then the Department can review the project more closely by asking for a 6(g) application to be filled out or ask for supplemental material to the PN if it is not adequate to issue the certification.

The primary screening or review of all projects by the Department of Fish and Game and the elimination of sending out 6(g) applications to all projects

by the joint PN with the Corps of Engineers make the manpower demands somewhat relieved.

Section 404 of PL 92-500 as amended in 1977 allows a state which has adequate laws and regulations to administer the Corps program. At this time, it does not appear that the state will seek administration of the program. Changes in the state law would be needed particularly since the state has no control over wetlands. A substantial amount of new paper work would also be generated at the state level.

3. Proposed FY 1979 Plan

During the year, it is proposed to follow the past practice of evaluating projects which will have the most effect on streams. The Department of Fish and Game will provide the screening of projects to keep duplication of effort to a minimum at the state level.

## ENFORCEMENT

### 1. State Legislation

Section 69-4806, R.C.M. is the heart of Montana's water pollution control law. This section states:

*It is unlawful to:*

- (1) cause pollution as defined in section 69-4802(5), R.C.M. 1947, of any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;*
- (2) carry on any of the following activities without a current permit from the department:*
  - (a) construct, modify, or operate a disposal system which discharges into any state waters; or*
  - (b) construct or use any outlet for the discharge of sewage, industrial wastes, or other wastes into any state waters; or*
  - (c) discharge sewage, industrial wastes, or other wastes into any state waters;*
- (3) violate any provision set forth in a permit or stipulation, including but not limited to limitations and conditions contained therein;*
- (4) violate any order issued pursuant to this chapter; or*
- (5) violate any provision of this chapter.*

### 2. Review of Past Program

Two administrative rules have been adopted by the Board of Health and Environmental Sciences which are key



elements in Montana's water pollution control program. MAC 16-2.14(10)-S14480 contains Montana's water quality standards which describe in-stream water quality requirements for specified uses and serve as the primary means for defining pollution of surface waters. The Montana Pollutant Discharge Elimination System rule is contained in MAC 16-2.14(10)-S14460. This rule provides the mechanism for authorizing and controlling point source discharges to state waters.

Violators of Montana's water pollution control law or rule, permit, or order established or issued pursuant to the law could be subject to injunction, civil penalties up to \$10,000 for each day of violation or criminal penalties with fines not to exceed \$25,000 per day of violation and/or imprisonment for not more than one year for an initial conviction and not more than \$50,000 per day of violation and/or imprisonment for not more than two years for subsequent violations.

The state attorney general is the statutory attorney for the department. The department attorneys have been commissioned as special assistant attorney generals to bring all civil action to court on behalf of the department. The state attorney general has no authority to institute criminal actions in any counties of the state. This is the duty of the county attorneys.

Abatement orders issued pursuant to section 69-4809.1 (1)(f) and compliance orders under section 69-4820.1 have been very effective administrative enforcement provisions available to the department.

The status of the enforcement program for state FY 1978 is summarized as follows: seventy-seven (77) water quality complaints were received and acted upon by the bureau (54% increase over FY 1977); twenty-eight (28) violation report forms were submitted to the Legal Division for assistance (22% increase over FY 1977); twelve (12) administrative orders were issued (9% increase over FY 1977); four (4) court complaints were initiated, of which three are pending settlement and one has been settled with a \$3500 penalty prior to actual court filing; and one-hundred and nine (109) preliminary enforcement letters were delivered consisting mainly of notices of violations and/or requests for corrective action (263% increase over FY 1977). As of July 1, 1978, seven violation report forms are pending in the Legal Division.

### 3. Five Year Strategy

The highest priority in the enforcement program is the correction of emergency situations involving threats to public health or safety. The next priority is to initiate corrective actions where there are violations of effluent limits, water quality standards, compliance schedules, or a failure to obtain a permit. These corrective actions will normally be initiated by one of the following:

- (1) *enforcement letter issued by the bureau; or*
- (2) *administrative order issued by the department director.*

Civil penalties will be sought where violations are numerous or extremely damaging, compliance schedules are not being met without good reason, administrative orders are violated, or where permits are not obtained where they are obviously needed. Complaints of water pollution will be investigated as soon as possible.

### 4. Proposed FY 1979 Plan

The bureau will continue an active enforcement program during FY 1979. Particular emphasis will be placed on bringing corrective action against all sources which failed to meet the July 1, 1977 effluent limits established by PL 92-500. These are mostly municipalities whose compliance schedules must be phased with the availability of construction grants. Realistic compliance schedules will be established through the MPDES program.

## OIL AND HAZARDOUS SPILLS CONTROL

### 1. State Legislation

Section 69-4823 (1), (2) and (7), R.C.M. provides the legal obligation for a State Oil and Hazardous Materials Pollution Control Contingency Plan to deal with removal, prevention and abatement of oil and hazardous substances spills affecting state waters.

Section 69-4809.1 states in part:

(1) *The department shall:*

(f) *Issue orders to any person to clean up any material which he or his employee, agent, or subcontractor has accidentally or purposely dumped, spilled, or otherwise deposited in or near state waters and which may pollute them;*

### 2. Past Program

The Federal Oil and Hazardous Materials Pollution Contingency Plan was promulgated under Section 311 of the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500) and is applicable to all waters of the United States. In addition to this federal plan, individual state plans are required by law. The state plan supplements the federal plan.

A State Oil and Hazardous Materials Spill Contingency Plan was developed during fiscal year 1973 and was printed and distributed during fiscal year 1974. Oil spill inspections and reporting have been coordinated with the EPA, Department of Fish and Game, and the Oil and Gas Conservation Division of the Montana Department of Natural Resources and Conservation. During fiscal year 1974, substantial improvements were provided in the oilfields in the Clarks Fork of the Yellowstone River drainage. This area was the source of many of the spills which occurred in former years. Complaints are received frequently from other areas of the state.

### 3. Five Year Strategy

Oil spill inspections and reporting will be coordinated with the EPA, Department of Fish and Game, the Oil and Gas Conservation Division of the Department of Natural Resources and Conservation and federal land resource

management agencies. The bureau will also cooperate with adjacent states, EPA, and adjoining provinces of Canada to provide a regional contingency plan. Further work will be done in the oilfields to further determine pollutional effects of oilfield activities.

Thus far, oil has played the dominant role in developing spill countermeasures. However, it is anticipated that efforts regarding hazardous materials will be expanded through cooperation with other bureaus in the department and other agencies. The Environmental Sciences Division's Occupational Health Bureau is the lead bureau. The state contingency plan will be updated periodically.

4. Proposed Fiscal Year 1979 Program

The major emphasis will be on improved response to spills through better communication between persons, industry and agencies concerned. EPA's assistance will be sought in establishing a better integrated program.

Inspections of problem areas will be conducted with land resource management agencies as manpower and other resources permit.

## MONITORING

### 1. State Legislation

Section 69-4809.1 states in part:

(1) *The Department shall:*

- (d) *collect and furnish information relating to the prevention of water pollution;*
- (e) *conduct or encourage necessary research and demonstrations concerning water pollution.*

### 2. Review of Past Program

During fiscal year 1978, the bureau's primary water quality monitoring network consisted of 45 physical, chemical, and/or biological stations.

A number of other agencies collected water quality data in Montana during fiscal year 1978. These included principally the U.S. Geological Survey, U.S. Bureau of Reclamation, U.S. Forest Service, EPA, and the Montana Department of Fish and Game.

Limited manpower prevented the bureau from sampling the Clark Fork River at Deer Lodge and the Clarks Fork of the Yellowstone at Laurel for monthly biological parameters. The former was sampled monthly for physical and chemical parameters but only once for biological parameters.

The Bitterroot River at Maclay Bridge and the Judith River at the mouth were dropped from the biological monitoring program. These stations were dropped after consideration of their overall benefit.

The intensive survey on Silver Bow Creek from Opportunity to the Lower pH Shack was conducted seasonally instead of monthly.

The chain of custody procedures employed by the bureau was reviewed and approved by EPA. Chain of custody is observed on all compliance monitoring samples and samples that could possibly be used for litigation.

The internal and external quality assurance programs developed over the past several years are still in operation in the bureau laboratories in Helena, Billings, and Kalispell. The quality assurance program accounts for about twenty percent of the time and cost of laboratory operations.

Effort has been expended to improve the analyses and the quality assurance program of other laboratories doing monitoring. A week-long school was held with follow-up visits to many of the laboratories.

EPA has received bureau data in a STORET compatible format. This requirement has been lacking, but through efforts made by both the EPA and the bureau, the transfer of data has been realized.

### 3. Five-Year Plan

The objective of the bureau's monitoring program is to provide information for management decisions regarding the quality of Montana's waters. To meet this objective requires not only data collection, but also data analysis and assessment. The monitoring program is designed to yield information on seasonal, historical, and spacial trends. Much of the water in Montana is of relatively high quality in relation to its designated uses. The maintenance of this high quality is of prime importance in the bureau's monitoring program.

The bureau's program is also highly activity related, i.e., areas where activities such as mining, logging, agriculture, and industrialization are occurring or are expected to occur in the future are monitored to insure that water quality is maintained for all designated uses. The basic monitoring strategy is the design of a monitoring network that fulfills the objective at a minimum cost. An integral part of this strategy is coordination between the bureau and other agencies which monitor water quality in Montana. A final aspect of the bureau's monitoring program is to insure that the monitoring assists in meeting the national needs.

An important element of the bureau's five-year plan is the reviewing and examination of the monitoring program. This examines the rationale of the various stages of the program in order to place monitoring on a scientific basis that yields a cost-effective program.

As in the past, the bureau will be involved in performing routine monitoring and technical studies. These studies involve monitoring to determine if water quality damage has occurred or could possibly occur as a result of some activities.

The bureau will also continue to review water quality related studies; both those conducted in Montana and those related to specific problems that have or may occur in Montana. This information will be cataloged for referencing by the bureau and other agencies.

The automated data processing and handling system for Montana water quality data being developed by the bureau will be in full scale operation. This system will receive data from the various agencies which collect water quality data in Montana (e.g., USGS, EPA, MBMG, Bureau of Rec., USFS), and make it available for retrieval by different key elements (e.g., sample location, parameter, sample source) in a variety of formats.

This type of system would eliminate unneeded monitoring by making the use and review of existing data much simpler and obtainable by others.

The bureau intends to become more proficient in the use of water quality models for decision making in water quality management planning in the next five years. Besides providing a method for processing water quality data into information that can be used by planners and managers, modelling provides an insight into what data the monitoring program should provide and what conditions are most critical to maintenance of water quality.

Additional work will be done to insure that field sampling procedures utilize the most current techniques. Techniques in sampling, preservation, storage, and chain of custody will be examined to insure that reliable results are provided.

Efforts will be made in the next five years to examine instrumentation for continuous instream monitoring of selected water quality parameters such as temperature, pH, and specific conductance. This will allow a continuous record to be developed on certain streams and other water bodies. Similarly, other monitoring techniques such as remote sensing and automated pollution alarm systems will be examined to determine their cost effectiveness.

#### 4. Proposed FY 1979 Program

Basically, the bureau's monitoring program follows the guidelines as set forth in the "Basic Water Monitoring Program" established by EPA. The bureau's monitoring program includes:

- (a) Effluent Monitoring
- (b) Fixed Station Monitoring (Including Ambient Water Quality Stations)
- (c) Synoptic Run Monitoring (Intensive Surveys)
- (d) Biological Monitoring
- (e) Quality Assurance
- (f) Data Processing and Handling

A significant amount of the FY 79 monitoring will be done in conjunction with the Statewide 208 program.

A. Effluent Monitoring

Compliance monitoring has been discussed previously in the "Waste Discharge Permits" section of this program plan. As indicated in that section, the bureau intends to compliance monitor major industrial and major municipal discharges in FY 79. Minor industrial and municipal discharges will be monitored in response to problems that occur throughout the year as manpower and funding permit.

Intensive surveys to determine the adequacy of present wastewater treatment facilities are scheduled for these communities identified in Table 6.

B. Fixed Station Monitoring

The total monitoring network includes those stations monitored by both the U.S. Geological Survey and the Water Quality Bureau. Table 5 shows a listing of the fixed monitoring stations in Montana. The table also indicates the agency doing the monitoring, the frequency of monitoring, and the type of parameters being monitored. Those stations which are designated as "National Ambient Water Quality Stations" are denoted by an asterik(\*).

C. Intensive Surveys

Table 6 shows the stream segments in which intensive surveys will be made by the Water Quality Bureau in FY 1979.

Special projects which are continuing from previous years are shown in the "Technical Studies and Support" section.

D. Biological Monitoring

The bureau's biological monitoring program will sample stations for a battery of biological parameters in FY 1979. These stations are identified in Table 5.

E. Quality Assurance

The bureau has already implemented many of the aspects of the "Minimum Quality Assurance Program" as outlined by EPA. In FY 1979, the bureau hopes to work further on accuracy control charts, development of the various quality control manuals, and on an optional quality assurance program for private laboratories and MPDES permittees. Much of the self-monitoring data for the MPDES program is analyzed by private laboratories.



TABLE 5. WATER QUALITY MONITORING NETWORK FOR MONTANA: FIXED STATIONS

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Physical	Data Type		
					Chemical	Biological	Sediment
Flathead	Whitefish River nr Kalispell	WQB, USGS	Seasonal Continuous	X	X	X	
	Stillwater River nr Kalispell	WQB	Seasonal	X	X	X	
	Stillwater River nr Whitefish	USGS	Continuous	X			
	Flathead River abv Flathead Lake	WQB	Seasonal	X	X	X	
	NF Flathead River nr Columbia Falls	WQB USGS	Seasonal Monthly/Seasonal	X	X	X	X
	MF Flathead River nr mouth	WQB	Seasonal	X	X	X	
	SF Flathead River abv Twin Creek	USGS	Continuous	X			
	Swan River nr mouth	WQB	Seasonal	X	X	X	
	Swift Creek nr Whitefish	USGS	Continuous	X			

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Physical	Chemical	Biological	Sediment
Flathead (cont'd)	Flathead River nr Polson	USGS	Continuous	X			
Kootenai	Lake Creek nr Troy (Chase Cut-off Br.)	WQB, USFS, USGS	Monthly, Seasonal, Quarterly	X	X	X	X
	Yaak River nr Troy	WQB, USGS	Seasonal Continuous	X	X	X	
	Fisher River nr Libby	WQB, USGS	Seasonal Continuous	X	X	X	
	Ross Creek nr Troy	USGS	Quarterly	X	X		X
	Stanley Creek nr Troy	USGS	Quarterly	X	X		X
	Big Cherry Creek abv St. Paul Mill Site (29N3027CBA)	WQB, USFS	Monthly		X		
	Big Cherry Creek blw St. Paul Mill Site (29N3027BOD)	WQB, USFS	Monthly		X		

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			Sediment
				Physical	Chemical	Biological	
Kootenai (cont'd)	Lake Koocanusa at Int. Boundary	USGS	Semi-monthly	X	X	X	
	Lake Koocanusa at Ten Mile Creek nr Libby	USGS	Semi-monthly	X	X	X	
	Lake Koocanusa at Forebay nr Libby	USGS	Semi-monthly	X	X	X	
	Kootenai River blw Libby Dam nr Libby	USGS	Continuous Semi-monthly	X	X		
	Tobacco River nr Eureka	USGS	Continuous	X			
St. Mary	Swift Current nr Babb	WQB	Seasonal	X	X	X	
	St. Mary River at Int. Boundary	USGS	Monthly/ Seasonal	X	X	X	X
Upper Clark Fork	Little Blackfoot River at Avon	WQB	Seasonal	X	X	X	
	Clearwater River nr mouth	WQB	Seasonal	X	X	X	

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Lower Clark Fork	Clark Fork River abv Missoula	WQB, USGS	Seasonal, Continuous	X	X	X	
	Bitterroot River at Maclay Bridge	WQB	Seasonal	X	X	X	
	Clark Fork River blw Missoula	USGS	Continuous	X	X		
	Clark Fork River at Huson	WQB	Seasonal	X	X	X	
	Clark Fork River at Harper's Bridge	WQB	Seasonal	X			
	Clark Fork River at Six Mile Station	WQB	Seasonal	X			
	Flathead River nr Mouth	WQB	Seasonal	X	X	X	
	Thompson River nr Thompson Falls	USGS	Continuous	X			
	Bull River nr Noxon	USGS	Continuous	X			
	Clark Fork River nr Plains	USGS	Continuous	X			

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Upper Missouri	Beaverhead River at Barretts	USGS	Monthly/ Continuous	X	X		
	Beaverhead River nr Twin Bridges	USGS	Monthly/ Continuous	X	X		
	Big Hole River nr Melrose	USGS	Continuous	X			
	Madison River blw Ennis Lake nr McAllister	USGS	Continuous	X			
	Big Sheep Creek blw Muddy Creek nr Dell	USGS	Daily	X			
Missouri-Sun-Smith	Missouri River at Toston	USGS	Continuous/ Monthly/ Seasonal	X	X	X	X
	Missouri River blw Canyon Ferry Dam nr Helena	USGS	Continuous/ Monthly/ Seasonal	X	X		
	Sun River blw Diversion Dam, nr Augusta	USGS	Continuous/ Monthly	X	X		

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Missouri-Sun-Smith (cont'd)	Muddy Creek nr Vaughn	USGS	Continuous/ Monthly	X	X		X
	Muddy Creek at Vaughn	USGS	Continuous/ Monthly	X	X		X
	Sun River nr Vaughn	USGS	Continuous/ Monthly	X	X		
	Belt Creek nr Monarch	USGS	Continuous	X			
	Missouri River at Ulm	WQB	Seasonal		X		
	Missouri River blw Morony Dam	WQB	Seasonal		X		
	Missouri River at Fort Benton	WQB	Seasonal		X		
Marias	Birch Creek nr Valier	USGS	Monthly/ Continuous	X	X		
	Marias River nr Chester	USGS	Monthly/ Continuous/ Seasonal	X	X	X	X
Middle Missouri	Missouri River at Virgelle	WQB, USGS	Seasonal/ Monthly/ Continuous	X	X	X	X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Middle Missouri (cont'd)	Missouri River nr Landusky	USGS	Continuous/Monthly	X	X		X
	Missouri River at Judith Landing	WQB	Seasonal		X		
	Missouri River at Fred Robinson Br.	WQB	Seasonal		X		
	Timber Creek nr Van Norman	USGS	Monthly	X	X		X
	Nelson Creek nr Van Norman	USGS	Monthly	X	X		X
Musselshell	Dougherty Coulee nr Klein	USGS	Monthly	X	X		X
	Half Breed Creek nr Klein	USGS	Monthly	X	X		X
	Musselshell River nr Roundup	WQB, USGS	Annual/Monthly	X	X	X	X
	East Parrot Creek nr Roundup	USGS	Monthly	X	X		X
	West Parrot Creek nr Roundup	USGS	Monthly	X	X		X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Musselshell (cont'd)	Fattig Creek nr Delphia	USGS	Monthly	X	X		X
	Musselshell River at Mosby	WQB, USGS	Annual/ Monthly/ Continuous	X	X	X	X
	S. Fork Musselshell River nr Martinsdale	WQB	Annual	X	X	X	
	N. Fork Musselshell River nr Martinsdale	WQB	Annual	X	X	X	
	Musselshell River nr Harlowton	WQB	Annual	X	X	X	
	Musselshell River at Shawmut	WQB	Annual	X	X	X	
	Musselshell River at Ryegate	WQB	Annual	X	X	X	
	Musselshell River at Levina	WQB	Annual	X	X	X	
	Musselshell River at Musselshell	WQB	Annual	X	X	X	
	Musselshell River at Melstone	WQB	Annual	X	X	X	



TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Musselshell (cont'd)	Careless Creek at Ryegate	WQB	Annual	X	X	X	
Milk	Box Elder Creek nr Rocky Boy	USGS	Monthly	X	X		X
	Lodge Creek blw McRae Creek at Int. Boundary	USGS	Miscellaneous		X		
	Little People's Creek nr Hays	USGS	Monthly	X	X		X
	Whitewater Creek nr Int. Boundary	USGS	Miscellaneous		X		
	Milk River at Juneburg Bridge nr Saco	USGS	Monthly/ Continuous	X	X		
	Rock Creek blw Horse Creek at Int. Boundary	USGS	Miscellaneous		X		
	McEachern Creek at Int. Boundary	USGS	Miscellaneous		X		
Lower Missouri	Milk River at Nashua	USGS	Monthly/ Continuous	X	X	X	X
	Prairie Elk Creek nr Oswego	USGS	Monthly	X	X		X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Lower Missouri (cont'd)	Redwater River at Circle	USGS	Monthly	X	X		X
	Horse Creek nr Circle	USGS	Monthly	X	X		X
	Redwater River nr Vida	USGS	Monthly	X	X		X
	Poplar River at Int. Boundary	USGS	Monthly	X	X		X
	Poplar River nr Scobey	USGS	Monthly	X	X		X
	E. Poplar River at Int. Boundary	USGS	Monthly/ Continuous	X	X		X
	E. Poplar River nr Scobey	USGS	Monthly/ Continuous	X	X		X
	Poplar River abv W. Fork nr Bredette	USGS	Monthly	X	X		X
	W. Fork Poplar River at Int. Boundary	USGS	Monthly	X	X		X
	W. Fork Poplar River nr Bredette	USGS	Monthly	X	X		X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Lower Missouri (cont'd)	Poplar River nr Poplar	USGS	Monthly	X	X		X
	Beaver Creek at Int. Boundary	USGS	Monthly/ Miscellaneous	X	X	X	X
	Missouri River nr Culbertson	USGS	Monthly/ Seasonal/ Continuous	X	X	X	X
Upper Yellowstone	Yellowstone River at Corwin Springs	USGS	Continuous	X			
	Yellowstone River nr Livingston	USGS	Monthly/ Continuous	X	X		
	Yellowstone River at Laurel	USGS	Semi-monthly	X	X		
	Clarks Fork Yellowstone River nr Silesia	USGS	Continuous	X			
	Yellowstone River at Billings	USGS	Monthly/ Continuous/ Seasonal	X	X	X	X
	Yellowstone River at Huntley	USGS	Semi-monthly/ Monthly/ Seasonal	X	X	X	X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Physical	Chemical	Biological	Sediment
Middle Yellowstone	Fly Creek at Pompey's Pillar	USGS	Monthly/ Continuous	X	X		
	Bighorn River nr St. Xavier	USGS	Monthly/ Continuous	X	X		
	Beauvais Creek nr St. Xavier	USGS	Monthly	X	X		X
	Little Bighorn River nr Hardin	USGS	Monthly/ Continuous	X	X		
	Bighorn River at Bighorn	USGS	Monthly/ Seasonal/ Continuous	X	X	X	X
	Sarpy Creek nr Hysham	USGS	Monthly	X	X		X
	E. Fork Armells Creek nr Colstrip	USGS	Monthly	X	X		X
	Armells Creek nr Forsyth	USGS	Monthly	X	X		X
	Yellowstone River at Forsyth	USGS	Monthly/ Seasonal	X	X	X	X
	Rosebud Creek at Kirby	USGS	Monthly	X	X		X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Middle Yellowstone (cont'd)	Rosebud Creek nr Colstrip	USGS	Monthly	X	X		X
	Snyder Creek nr Brandenburg	USGS	Monthly	X	X		X
	Rosebud Creek at mouth nr Rosebud	USGS	Monthly	X	X		X
	Yellowstone River nr Miles City	USGS	Continuous/ Semi-monthly/ Monthly/ Seasonal	X	X	X	X
	Squirrel Creek nr Decker	USGS	Monthly	X	X		X
	Spring Creek nr Decker	USGS	Monthly	X	X		X
	Tongue River at Tongue River Dam nr Decker	USGS	Monthly	X	X		X
	Prairie Dog Creek nr Birney	USGS	Monthly	X	X		X
	E. Fork Trail Creek nr Otter	USGS	Monthly	X	X		X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Physical	Chemical	Biological	Sediment
Middle Yellowstone (cont'd)	Hanging Woman Creek blw Horse Creek nr Birney	USGS	Monthly	X	X		X
	Hanging Woman Creek nr Birney	WQB, USGS	Seasonal/ Monthly	X	X	X	X
	Tongue River blw Hanging Woman Creek nr Birney	WQB, USGS	Seasonal/ Monthly	X	X	X	X
	Otter Creek nr Otter	USGS	Monthly	X	X		X
	Otter Creek blw 15 Mile Creek nr Otter	USGS	Monthly	X	X		X
	Home Creek nr Ashland	USGS	Monthly	X	X		X
	Otter Creek at Ashland	WQB, USGS	Seasonal/ Monthly	X	X	X	X
	Tongue River blw Brandenburg Br. nr Ashland	USGS	Continuous/ Monthly	X	X		X
	Pumpkin Creek nr Loesch	USGS	Monthly	X	X		X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			
				Physical	Chemical	Biological	Sediment
Middle Yellowstone (cont'd)	Pumpkin Creek nr Miles City	WQB, USGS	Seasonal/Monthly	X	X	X	X
	Tongue River at Miles City	USGS	Monthly/Continuous/Seasonal	X	X	X	X
	Yellowstone River at Miles City	USGS	Continuous	X			
	Upper Rosebud Creek nr Kirby	WQB	Seasonal	X	X	X	
	Upper Hanging Woman Creek nr Quietus	WQB	Seasonal	X	X	X	
Lower Yellowstone	Powder River at Moorhead	USGS	Monthly/Seasonal	X	X		X
	Powder River at Broadus	USGS	Continuous	X			X
	Mizpah Creek at Olive	USGS	Monthly	X	X		X
	Mizpah Creek nr Mizpah	WQB, USGS	Seasonal/Monthly	X	X	X	X

TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Physical	Chemical	Biological	Sediment
Lower Yellowstone (cont'd)	Powder River nr Locate	USGS	Monthly/ Seasonal/ Continuous	X	X	X	X
	Yellowstone River nr Terry	USGS	Monthly/ Seasonal	X	X	X	X
	Cherry Creek nr Terry	USGS	Monthly	X	X		X
	Glendive Creek nr Glendive	USGS	Monthly	X	X		X
	Cottonwood Creek nr Intake	USGS	Monthly	X	X		X
	Burns Creek nr Savage	USGS	Monthly	X	X		X
	Yellowstone River nr Sidney	USGS	Semi-monthly/ Continuous/ Seasonal	X	X	X	X
	Crow Rock Creek nr Cohagen	USGS	Monthly- Seasonal	X	X	X	X
	O'Fallon Creek nr Ismay	USGS	Monthly	X	X	X	X



TABLE 5. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Physical	Chemical	Biological	Sediment
Lower Yellowstone (cont'd)	Clear Creek nr Hoyt	USGS	Monthly- Seasonal	X	X	X	X
	Upper Seven Mile Creek nr Lindsay	USGS	Monthly- Seasonal	X	X	X	X
	Deer Creek nr Glendive	USGS	Monthly- Seasonal	X	X	X	X

TABLE 6. WATER QUALITY MONITORING NETWORK FOR MONTANA: INTENSIVE SURVEYS

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Physical	Chemical	Biological	Sediment
Flathead	Swan Lake Intensive Eutrophication Study (Bond, Hall, Groom Creeks)	WQB	Seasonal		X	X	
	Logan Cr. Logging Impact Study (various sta's blw current and proposed timber sales)	WQB	Seasonal	X	X	X	X
Upper Clark Fork	Silverbow Cr. abv to blw Warm Springs STP	WQB	Seasonal		X	X	
	Flint Cr. abv to blw Philipsburg STP	WQB	Seasonal		X	X	
Lower Clark Fork	Crow Cr. abv to blw Ronan STP	WQB	Seasonal		X	X	
Missouri-Sun-Smith	Benton Lake Saline Seep Study	WQB	Seasonal	X	X	X	
	Shonkin Cr. Saline Seep Study	WQB	Seasonal	X	X	X	

TABLE 6. Continued

Basin	Stream Station	Monitoring Agency	Monitoring Frequency	Data Type			Sediment
				Physical	Chemical	Biological	
Marias	Teton River abv to blw Choteau STP	WQB	Seasonal		X	X	
	Willow Creek abv to blw Browning STP	WQB	Seasonal		X	X	
	Marias River abv to blw Shelby STP	WQB	Seasonal		X	X	
	Old Maids Coulee (trib. to Cut- bank Cr.) abv to blw Cutbank STP	WQB	Seasonal		X	X	
	So. Pondera Coulee abv to blw Brady STP	WQB	Seasonal		X	X	
Milk	Milk River abv to blw Glasgow STP	WQB	Seasonal		X	X	
Upper Yellowstone	Rock Creek abv to blw Red Lodge STP	WQB	Seasonal		X	X	

F. Data Processing and Handling

The automated data processing and handling system for Montana water quality data was realized in FY 1978. Periodic updates will be made to the system throughout FY 1979. When these updates are made, a tape of water quality data will be sent to EPA and placed on the STORET file.

G. Miscellaneous Monitoring

Some monitoring does occur during the year in response to complaints and new developments, but it is impossible to predict exactly where these will occur and how much monitoring they will require. It is expected that the amount of this type of monitoring will be similar to preceding years. These conditions are monitored as time and resources permit.

H. Estimates of Expenditures for Sampling, Analysis, and Data Processing

For FY 1979, the following estimates are projected for the monitoring program:

Compliance Monitoring	30,000
208 Monitoring	30,000
Scheduled Bureau Monitoring	35,000
Unscheduled Bureau Monitoring	22,000
Drinking Water	30,000
Total	<u>\$147,000</u>

Of this total cost, percentages are estimated for the following categories:

Field Sampling	15%
Laboratory Analysis	57%
Data Processing and Handling	4%
Quality Assurance*	20%
Program Management	4%

\*This does not include training for laboratory personnel.

## WATER QUALITY MANAGEMENT

### 1. State and Federal Legislation

General Department responsibilities are mandated by state and federal legislation. As stated in Section 69-4809.1 of state legislation:

(1) The department shall:

- (d) *Collect and furnish information relating to the prevention and control of water pollution;*
- (h) *advise, consult, and cooperate with other states, other state and federal agencies, affected groups, political subdivisions, and industries in the formulation of a comprehensive plan to prevent and control pollution.*

And, the 1977 Federal Water Pollution Control Act (PL 92-500), Section 101(a):

- (5) it is the national policy that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State;

and Section 208(a):

- (6) The State shall act as a planning agency for all portions of such State which are not designated (areawide waste treatment management planning areas).

More specifically, the Department is responsible for implementation of Section 69-4806 of state legislation which states in part:

*It is unlawful to:*

- (1) *cause pollution as defined in section 69-4802(5), R.C.M. 1947, of any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;*

### 2. Review of Past Program

(a) Basin Planning

The 1972 version of the Federal Water Pollution Control Act (PL 92-500) directed states to initiate basin water quality management planning to:

- 1. determine water quality characteristics of all natural and wastewaters;

2. determine what natural and man-related activities affect water quality in each basin;
3. develop a management strategy for maintaining and enhancing water quality in each basin;
4. provide information necessary to determine if water quality standards are being and will be met in the future.

Though the basin plans (last one completed in 1977) identified nonpoint source pollution as the major statewide problem, the effort culminated in the realization that additional technical research was needed to adequately define water quality problems, their causes, and necessary corrective measures.

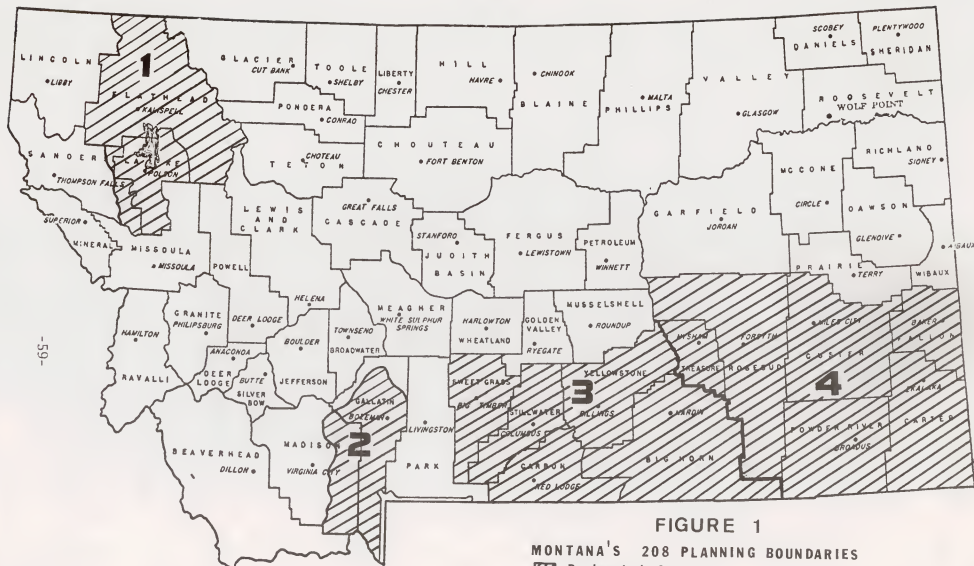
(b) 208 Planning

Areawide and Statewide 208 planning succeeded the basin planning effort. In accordance with PL 92-500, four areas of Montana were designated by Governor Judge in FY 1975 as areawide waste treatment management planning districts (Figure 1). Designation was based on the existences of or potential for development of complex water quality problems due to intensive population growth and industrial development.

The four designated planning areas received 100% funding from the EPA to assess local water quality, determine land use-water quality relationships, evaluate alternatives for water quality management, and develop an implementable plan to correct existing and prevent future water quality degradation.

The four areawide plans have been completed and are in the review process. Subsequent to review considerations, the plans will be certified by the Governor and implemented.

The 1972 Federal Water Pollution Control Act was written with the intent that areawide water quality management plans would solve the majority of the nation's water quality problems. However, a 1975 court decision concluded that such piecemeal planning would not meet the Act's goals. Consequently, EPA was directed to initiate similar detailed planning efforts in the non-designated portion of each state. As a result, the Water Quality Bureau was awarded a Statewide 208 planning grant on June 8, 1976 and received \$540,000 in federal funds to be matched with \$180,000 in state funds.



Though the major objectives of the Statewide 208 planning project were to be similar to areawide objectives, level of detail was modified to account for the considerably larger planning area; the Statewide 208 project covers 107,000 square miles (73% of the state total) and contains about 65% of state's population. The project's draft report, containing a description of water quality problems in the area and discussing various alternatives for dealing with those problems, is to be completed in November, 1978.

(c) Sediment Control Project

Although nonpoint source pollution, and in particular sediment pollution, has long been recognized as a significant statewide water quality problem, past state and federal emphasis has been on point source pollution in general with highest priority on public health related problems. Due to the widespread occurrence and complexity of the sediment problem and lack of funds, no major attempts were made to deal with the problem until Senate Joint Resolution 52 was adopted by the 1974 Legislature. The Resolution charged the Department of Natural Resources and Conservation and the Resource Conservation Advisory Council, in cooperation with the Montana Association of Conservation Districts, Department of Health and Environmental Sciences, and other interested parties, to thoroughly assess the sediment problem. The study was to include a review of existing legislation and to make recommendations to the 1975 Legislature for a statewide program to control soil erosion and sediment damage. The general conclusion of the study was that an additional assessment was necessary before legislative recommendations could be made.

To assist in this assessment, the bureau applied for and received a grant for a Statewide Sediment Control Project. The objectives of the project were as follows:

1. further assess the magnitude of the sediment problem;
2. develop best management practices necessary to control erosion problems;
3. conduct a cost-effective analysis for implementation of sediment control programs;
4. evaluate existing regulatory authority applicable to sediment control;
5. develop and implement a pilot sediment control program based on the Montana Conservation District law and administered at the local level by the Lewis and Clark Conservation District.



The DHEIS contracted with the DNR&C and the Lewis and Clark Conservation District to carry out this project. The initial project has now been completed and has shown that people will support a regulatory erosion control program administered at the local level as evidenced by the successful referendum vote within the Lewis and Clark Conservation District. The project is now in the implementation stage with a sediment control ordinance having been approved by voters in the Lewis and Clark Conservation District.

### 3. Five Year Strategy

Water quality management in Montana in the next five years will consist of implementation of areawide and statewide 208 plans. More specifically:

(a) Monitoring programs initiated through FY 79 will be continued:

- instream flow requirements
- groundwater pollution sources
- stormwater runoff pollution
- subdivision pollution

(b) Correction/abatement programs, designed through FY 79, will be implemented and monitored:

- Ag-NPS management
- sediment control
- stormwater runoff control
- subdivision pollution control
- saline seep management
- instream flow maintenance
- stream quality index update

(c) Assessments of remaining problem categories and areas will be initiated:

- silviculture NPS pollution
- mining NPS pollution
- Kootenai River Basin problem assessment
- Lower Missouri River Basin problem assessment
- residual waste disposal pollution
- construction NPS pollution
- hydrographic modification NPS pollution

### 4. Fiscal Year 1979 Program Plan

(a) Areawide Plans

Each of the four designated planning areas have completed water quality management plans in at least a draft form. These plans are currently undergoing review by several state agencies. When this review has been completed, recommendations will be made to the Governor regarding the type of certification which should be made. Certification will take place in the first quarter of the fiscal year.

Interim needs of the four designated areas have been reviewed and recommendations have been made regarding the same to EPA. Tentative work plans have been submitted to and reviewed by the bureau.

A summary of these work plans follows:

(1) Flathead Drainage Areawide Planning Organization

- a) Completion of management plan
  - 1) Respond to State and EPA comments
  - 2) Develop management agreements with implementing agencies (F.S., BIA, Cons. Dists.)
- b) Carry out a nutrient budget study on Flathead Lake, in conjunction with the Flathead EIS.
- c) Work with local sanitarian to establish a network of wells in the Evergreen area to monitor groundwater level fluctuations and quality.
- d) Coordinate the monitoring program portion of the Flathead EIS.
- e) Coordinate the growth workshops held in conjunction with Conservation Districts, Chambers of Commerce, Realtors, APO's, etc.
- f) Establish subdivision review process with local government agencies.
- g) Monitor preparation of facility plans in Kalispell and Columbia Falls.
- h) Assist in review and revision of septic tank regulations.

(2) Middle Yellowstone Areawide Planning Organization

- a) Continue urban runoff studies for Billings and Laurel.
  - b) Monitor completion of facility plans and proposed construction grant projects.
  - c) Assist conservation districts in an educational program for erosion and sediment control.
  - d) Monitor coal and subdivision development in Big Horn County.
  - e) Work to develop a strategy for streambank degradation control along the Yellowstone.
  - f) Monitor groundwater pollution (chrome and phenols) at Columbus.
  - g) Develop long-term strategy for salinity management.
  - h) Work with Montana Experiment Station to improve irrigation water management and fertilizer application methods.
  - i) Complete stream inventories in five county area - low level photograph and supporting ground truth information.
- (3) Yellowstone-Tongue Areawide Planning Organization
- a) Provide technical assistance to Conservation Districts in development of Best Management Practices (BMP's).
  - b) Monitor progress of Rural Clean Water Program and assist Conservation Districts in carrying out their role under that program.
  - c) Provide technical assistance on water quality matters to state and local agencies.
  - d) Undertake a program, with Department of State Lands, to check abandoned drill holes, take groundwater samples, and soil profiles to evaluate mining impacts on water quality.
  - e) Continue to work with Federal agencies to insure that 208 programs are implemented on lands under their control.

- f) Inform counties and towns of state and federal regulations dealing with water quality.
  - g) Work with local sanitarians on septic tank regulation problems.
  - h) Monitor energy development with counties to prevent deterioration of surface and groundwater.
  - i) Provide for annual revision to the water quality management plan.
- (4) Blue Ribbons of the Big Sky Country Areawide Planning Organization
- a) Continue general program administration.
  - b) Provide assistance to designated management agencies as necessary to carry out the plan recommendations.
  - c) Provide coordination between management agencies, the State of Montana and EPA.
  - d) Continue a program of public education and awareness.
  - e) Continue the following studies:
    - 1) Madison River Thermal Study
    - 2) Madison Valley Groundwater Study
    - 3) Bozeman Urban Runoff Study
    - 4) Hebgen Lake Study
    - 5) Taylor Fork Stabilization Study.
  - f) Coordinate the preparation of an annual report which will evaluate the implementation progress, redefine implementation priorities, schedules and target abatement dates, and update the plan itself.

(b) Statewide 208 Plan

Statewide 208 assessments of the past two years have identified the projects described below as most urgent for successful protection of the quality of the state's water. Although the projects will be restricted to the Statewide 208 study area, several will have statewide applicability.

Water Quality Bureau staffing limitations will necessitate the use of outside professional contracts for many of the projects.

At this point, the projects are not listed in order of highest priority. However, depending on actual amounts of federal funds, it may be necessary to either postpone one or more projects or reduce the scope of one or more in order to accommodate all. Ideally, initiation of all of these projects in the next year would represent a significant achievement in protection of Montana's water.

- (1) Saline seep -- About 11 million acres in the Statewide 208 area are used for dryland farming. Much of this land is and has been farmed with the crop-fallow system which contributes to saline seep development and increased recharge to groundwater.

The high concentrations of sulfate, nitrate, sodium, magnesium, and trace metals such as selenium in saline seeps not only cause productivity loss in agricultural land but significantly reduce the quality of surface and groundwaters.

Total area affected by saline seep in Montana has been estimated by various sources to be from 140,000 to 200,000 acres. The Montana Association of Conservation Districts survey, as part of the Statewide 208 Ag-NPS assessment, estimated there to be 164,400 acres affected by saline seep in the Statewide 208 area alone. Though the exact amount of land affected by saline seep is yet to be determined, all reports do agree that the problem is increasing at a significant rate.

The widespread occurrence and rapid and continuing increase of saline seeps make the problem one of the most significant threats to Montana's groundwater supplies. In addition, it is likely saline seeps in Montana are adversely affecting the quality of regional as well as local aquifers.

Though it is fairly easy to quantify the extent of saline seeps, sufficient data are lacking to adequately document the extent to which seeps are affecting groundwater supplies. Within the next year, the bureau will initiate a groundwater monitoring program to determine groundwater salinity trends in the affected areas.

Monitoring costs will necessitate confinement of the assessment to one basin initially. Preliminary review of existing data seems to indicate the Missouri River Basin as a likely study area. The Basin has 4,643,269 acres in dryland farming with an estimated 101,709 acres of saline seep. And, the Basin contains both local and regional aquifers.

The first year's program will focus on collection of data in at least one local and one regional aquifer within the selected basin. Although exact quantification of impact trends is likely to require several years' data, at least some local effects are expected to be identified within the first year.

Concurrent with the monitoring program, available saline seep management research will be compiled and assessed for its applicability to the project area.

In addition, the bureau is presently considering granting of a saline seep discharge permit. If granted, the discharge would be allowed for research purposes and a monitoring program would be established to document the specific seep's impacts on area groundwater supplies and surface receiving waters.

- (2) Clark Fork River Basin -- An intensive assessment of land uses and water quality in the Clark Fork River Basin will be initiated in FY 79. Although the basin contains some of the state's finest quality waters, it also has severe non-point water quality problems which are anticipated to increase with increasing population and resource development in the basin. Correction of existing problems and adequate protection of the basin's waters in the future will require a thorough assessment of existing water quality and an evaluation of that quality in light of existing land uses and proposed future developments.

The basin represents a complexity of land uses. Preliminary assessments through the Statewide 208 effort have indicated several of those major land uses pose a significant threat to the basin's water quality. For example, the silviculture assessment identified 61 existing and 31 potential problem areas due to silvicultural activities.

The mining assessment identified 25 known problem areas but stressed the Clark Fork Basin is one of three in the Statewide 208 which is experiencing an increase in mining development. The upper part of the basin, including the Flint Creek area, has the most hard rock operating permits (7) in the state. There are 141 small miner operations in Deer Lodge, Granite, Powell, and Silver Bow counties. And, exploration activities and oil and gas leasing in the basin are significant.

Irrigation of agricultural land accounts for the largest use of water in the basin and threatens the basin's surface waters with reduced stream flows and sediment and mineral-laden irrigation return flows.

Subdivision activity in pristine valleys such as the Bitterroot Valley is an increasing threat to surface and groundwater quality. The Statewide 208 groundwater pollution assessment identified nine counties having the most intense subdivision activity. Five of those counties (Mineral, Missoula, Ravalli, Powell, and Lewis and Clark) are in the Clark Fork River Basin.

The FY 79 assessment will identify the use and quality of major streams in the Clark Fork River Basin and assess existing and future impacts on those streams due to mining, silviculture, agriculture, and subdivisions.

- (3) Dewatering -- Though readily recognized as a significant threat to water quality, dewatering is Montana's most difficult problem to manage. These management difficulties are due to the facts that agriculture is the state's major industry, that there is a conflict of responsibilities between water quality and water quantity management agencies, and that documentation of the problem's existence and effects on water quality is not always easily obtained.

Despite the problem's complexity, Montana does have streams whose value is significant enough to warrant their protection at all costs.

Montana's Blue Ribbon streams are of a quality priceless to all beneficial uses in the state. In addition, their fame as prime trout streams accounts for their national value. In the

Statewide 208 area, the Blue Ribbon streams include Rock Creek and segments of the Big Hole, Yellowstone, and Missouri Rivers. In FY 79 the Water Quality Bureau will initiate a program to try to maintain minimum flows sufficient to preserve the Blue Ribbon quality of these streams. The project will:

- a) determine major water uses in these segments,
  - b) determine how much water must remain in these segments for quality maintenance,
  - c) determine which segments are now or will in the future be threatened by extensive dewatering,
  - d) determine what are the most feasible means for maintaining minimum flows,
  - e) establish a program to monitor flows.
- (4) Milk River Basin -- Nonpoint source pollution, particularly sediment, was identified in the Milk River Basin plan (303c) as its major water quality problem; however, overall water quality of the basin is poorly understood. Several public water supplies are taken from the River, and these are of particular concern.

In the past, irrigation return flows have been considered to contribute to water quality degradation and health problems. During FY 79 a project will be initiated to quantify the impacts of irrigation return flows on the basin's water quality. Specific steps to be undertaken include:

- a) determination of land uses and trends,
  - b) determination of the amount of irrigation, water source, and quality of return flows and receiving streams,
  - c) development of management program to achieve desired level of impact reduction.
- (5) Stormwater assessment -- The Statewide 208 stormwater runoff pollution assessment will continue in FY 79. In FY 78 the assessment used a desk-top model to identify potential urban and industrial problem areas. A contract was let late in the fiscal year to obtain more detailed information.



There are relatively few industrial stormwater problems in the Statewide 208 area, and urban runoff will be the objective in the next year. Two cities, Helena and Anaconda, were identified by the preliminary assessment as potential problem areas. Summer storm sampling is now being conducted in those cities. Samples will also be collected during spring runoff in FY 79. Samples are being analyzed for nutrients, metals, coliforms, BOD, and sediment.

These new data and existing data will be used in a computer model to predict pollutant loadings under present and future conditions.

The final phase of the assessment, to be completed in FY 79, will be the evaluation of structural and management alternatives for eliminating impacts in the test cities. The evaluation will be applied statewide to develop control and abatement guidelines.

Since the guidelines will essentially be based on the results in only two cities, it is anticipated their application will be followed by refinement and reapplication. However, by developing the model and trying the guidelines in one of the state's most complex urban-industrial situations, Anaconda, it is likely statewide application will be more efficient than if test sites had been restricted to relatively uncomplicated areas.

Though the management program developed in FY 79 will be oriented towards both prevention and remedial measures, a major emphasis will be on prevention of stormwater runoff pollution. Since the assessment addresses sediment, and in view of the rapid proliferation of subdivisions and associated sediment problems, such a program will be most valuable to the bureau's management program.

- (6) Agriculture Nonpoint Source Planning -- Based on the recommendation of the Montana Association of Conservation Districts (MACD), a non-regulatory Ag-NPS management program is expected to be implemented in FY 79. The program would rely on the conservation districts and the Conservation District Division (CDD) of the Department of Natural Resources and Conservation as management agencies.

During FY 79, funding will be provided to CDD to facilitate their planning responsibilities as a management agency. CDD will assist each district in revision of their Long Range Plans to include management of water quality problems.

The MACD Ag-NPS inventory identified potential water quality problems; during FY 79, the CDD, conservation districts, and bureau will evaluate those data to identify specific critical water quality problems within each district. The CDD will then work with the districts to develop a feasible management program for those problems.

- (7) Stream quality index -- Development of a statewide stream quality index system will be initiated in FY 79. The index will be designed to depict overall stream quality and document water quality trends in succeeding years. The system will be based on:
- a) relationship between chemical data and water quality standards
  - b) biological monitoring data
  - c) resource values being developed by the Department of Fish and Game and based on stream quality from a fisheries standpoint
  - d) instream flow requirements and conditions.

Not only will the index be a valuable management tool for the bureau, but will be an effective way to display quality trends for public use.

- (8) Subdivision Assessment -- The Statewide 208 groundwater and preliminary subdivision assessment identified subdivisions as a potential groundwater quality problem. The problem is three-fold: rapid increase of subdivisions, a limited review process, and the need for review of the adequacy of regulations for installation of sub-surface domestic waste disposal systems.

Using the preliminary assessment, which subjectively evaluated the pollution potential of 32 major subdivisions in the Statewide 208 area, a more in-depth assessment of subdivision pollution was recently initiated and will continue in FY 79.

Five of the top priority subdivisions listed in the preliminary report were selected for groundwater monitoring. The sites include: Sewell's Addition #4 (Lewis and Clark Co.), Lambkins (Lewis and Clark County), H & R Addition (Ravalli County), Hawken Lane Estates (Ravalli County), Five Acre Tracts (Park County), South Libby Flats, number one priority, and Opportunity, number three priority, were not selected because of planned or on-going studies of a similar nature.

Existing and new wells and sand points will be used to obtain bi-monthly samples in each site. Samples will be analyzed for fecal coliforms, COD, nitrate, ammonia, TDS, chlorides, and pH.

These new and any existing data will be used to quantify the effects of sub-surface disposal systems on groundwater quality. The information will be the basis for an evaluation of the effectiveness of existing guidelines or regulations and development of a management program to more effectively control groundwater pollution by subdivisions.

- (9) Biological Monitoring -- The first phase of biological monitoring will continue in FY 79. A report for the southwest loop is being completed. Sampling is finished on the north-central loop and data will be analyzed in FY 79. Sampling has begun on the northwest loop with the summer run; fall and spring runs will be made in FY 79. A separate report will be prepared for each loop.

Though data collected through FY 79 will be useful in assessing overall stream quality, the program's full value will be realized during the second phase (FY 80-83) when loops are sampled again and quality trends begin to become apparent.

- (10) Flint Creek Range -- The Flint Creek Range in the Clark Fork River Drainage was identified in the Statewide 208 mining assessment as an area needing additional study based on its potential for intense future mining activities. Mineral reserves are significant in the range and exploration and leasing activities have intensified recently.

In an effort to obtain baseline data to document future water quality trends due to mining activity, a sampling program was initiated in FY 78 and will

be of value not only in documenting the relationship between mining activities and water quality, but will be important in assessing overall water quality in the Clark Fork River Basin.

- (11) Lewis and Clark Conservation District Sediment Control Project -- Administration of the sediment control program in the Lewis and Clark Conservation District will continue in FY 79. The program's success will be evaluated and used as a basis for developing and proposing similar programs in selected districts having critical sediment problems.
- (12) Public Participation -- Public involvement is an important aspect of the Statewide 208 effort and will continue in FY 79. A major effort will be to disburse the draft statewide 208 plan for review. Another chapter of this report further discusses the bureau's public participation program.
- (13) Water Quality Standards -- Revision of Montana's Standards will be funded, in part, through the Statewide 208 program in FY 79. Another chapter of this report discusses the Standards in detail.

## TECHNICAL STUDIES AND SUPPORT

### 1. State Legislation

Section 69-4809.1(1)(d) and (e) under Duties of Department states:

*(1) The department shall:*

*(d) Collect and furnish information relating to the prevention and control of water pollution;*

*(e) Conduct or encourage necessary research and demonstration concerning water pollution;*

### 2. Past Program

The bureau's technical studies and support capabilities have largely been funded through special grants or contractual agreements with other agencies. Five studies were completed during FY '78. These were:

- a. Colstrip wastewater pond assessment.
- b. Statewide sediment control project.
- c. Preliminary assessment of the water quality effects of the Canadian power generation facility on the East Poplar River.
- d. Assessment of water quality effects by coal developments on the Tongue River and Tongue River Reservoir in Montana.
- e. ASARCO-Troy environmental impact statement assessment relating to water quality. The complete environmental study was coordinated by the Department of State Lands.

Two new studies were initiated during FY '78. These were:

- a. Preliminary assessment of surface impoundments containing wastewater. Funded by EPA.

- b. Biological-benthic study of streams draining coal field areas in southeastern Montana. Funded by USGS.

In addition, two studies initiated before FY '78 will be continued beyond FY '78. These are:

- a. Logan Creek study which is funded by the U.S. Forest Service to evaluate the impacts of logging.
- b. Assessing the impacts on water quality of the Poplar River by the Canadian power generation facility. This study is predicting the effects on the Poplar River System at various levels of development and wastewater treatment.

Additional studies have been completed during FY '78 and some are continuing under the Statewide 208 water quality management program and are further explained in that section.

### 3. Five Year Strategy

The bureau plans to maintain a staff of engineers, biologists, chemists, soil scientists, etc. who can provide professional expertise for performing, supervising, and evaluating water quality assessments. Studies to be performed will largely relate to new development of the State's resources and the actual manpower needed depends on how fast development proceeds. Some of the assessment work will need to be contracted, but the bureau's staff will have the capability to "oversee" this work. In certain cases the bureau will need to obtain specific funding for specific studies.

### 4. Proposed FY '79 Plan

Work will continue on the Logan Creek and southeastern Montana studies. The preliminary assessment of surface impoundments will be completed. The predictive effort on the Poplar River coal development water quality impacts should be completed. If any new studies are initiated outside the Statewide 208 funding area, these will probably be associated with predicting the effects of new developments and be funded through environmental impact assessment fees.

## GROUNDWATER

### 1. State Legislation

Section 69-4802 (9) states:

- (9) *"State waters" means any body of water, irrigation system, or drainage water either surface or underground; however, this subsection does not apply to irrigation waters where the waters are used up within the irrigation system and the waters are not returned to any state waters.*

Section 69-4804 states:

*This chapter applies to drainage or seepage from all sources including that from artificial, privately owned ponds or lagoons if such drainage or seepage may reach other state waters in a condition which may pollute the other state waters.*

Section 69-4904 (4) and (5) state:

*The department of health and environmental sciences shall:*

- (4) *Advise persons as to the best method of purifying and disposing of their drainage, sewage, or waste water with reference to the existing and future needs of other persons and to prevent pollution;*
- (5) *Consult with persons engaged in or intending to engage in manufacturing or other business whose drainage, or sewage may tend to pollute waters as to the best method of preventing pollution.*

Section 69-4905 (1) states:

*A person shall not:*

- (1) *Discharge polluting matter of any kind that will pollute the quality of state waters used by a person for domestic use or as a source of supply by a city, town, public institution, water or ice company.*

## 2. Review of Past Program

To a limited extent, the bureau has investigated potential and existing groundwater pollution. The primary constraint is the costliness of an extensive groundwater investigation. The bureau's most recent study has been an investigation of the wastewater ponds at Colstrip which was funded by an EPA grant. A Groundwater Quality and Pollution Assessment for the Statewide 208 Area has been completed. A new study funded by Safe Drinking Water Act (P.L. 93-523), Section 1442(b)(3)(c) funds is providing an assessment of surface impoundments in the state. The proposed assessment is providing an inventory of waste holding ponds, pits, and lagoons. In addition, the pollution potential of these impoundments will be preliminarily assessed, monitoring programs will be evaluated, existing pollution problems will be documented, and recommendations for regulations, financial assistance, monitoring and enforcement programs will be provided.

During the past year, an in-situ uranium mining control regulation was adopted by the Board. This is the first groundwater control regulation adopted by them. Draft regulations for control of wastewater from surface impoundments have been written, but additional work is needed on the regulations.

## 3. Five Year Strategy

As resources permit, the bureau will continue to investigate potential and existing groundwater pollution problems. The initial impoundment assessment will be completed and more specific assessments will be done where a real need is apparent. Regulations for control of infiltration of wastewater to the groundwater from surface impoundments and groundwater standards will be finalized and implemented. The department does not plan to adopt the underground injection control regulations that are being developed by EPA under provisions of P.L. 93-523 for the reason that maintaining a staff of hydrogeologists needed for this program would probably be impossible at the state pay schedules. Additional groundwater data will be obtained and assessed through the water pollution control and public water supply programs. Work on the saline seep control program will continue in cooperation with other agencies.

## 4. Proposed FY 1979 Plan

The bureau will complete the initial surface impoundment assessment which is underway. The study and evaluation of the Colstrip ponds will be continued at a



reduced level of resources. An evaluation of groundwater data presently available to the bureau will be made and a strategy for acquiring additional data will be developed for future years. The bureau will cooperate with other agencies in trying to control saline seep.

## LAKES

### 1. State Legislation

Section 69-4801(1)(b) states:

(1) It is the public policy of this state to:

(b) *provide a comprehensive program for the prevention, abatement, and control of water pollution.*

### 2. Past Program

Because of local interest and a lack of resources, previous lake investigations have dealt with specific lakes. Such investigations include: 1) a study of the nutrient budgets of Flathead Lake and Canyon Ferry and Hebgen Reservoirs; 2) a survey of Twelve Lakes near Kalispell; and, 3) the EPA National Lake Survey of fifteen Montana lakes.

### 3. Five Year Strategy

The following are planned:

- a) to identify and classify by eutrophic condition all publicly owned fresh water lakes in Montana;
- b) to begin development of procedures, processes and methods to control sources of pollution to Montana lakes where needed;
- c) to develop and, where possible, apply methods and procedures to restore the quality of degraded lakes; and
- d) to develop a priority system for such restoration.

### 4. Proposed FY 1979 Plan

The bureau will make application to EPA for a \$100,000 grant (matched by \$43,000 state funds) to identify and classify by eutrophic status all publicly owned fresh water lakes. Based on this work, a priority list for restoration will be developed. The inventory, classification and prioritization will be handled by contract with the Department of Fish and Game and the University System. As an interim measure, early in the year, a preliminary priority list will be developed for restoration of Montana's lakes using data which is already on file. This will be done in order for grants to be obtained for specific restoration work.

## PUBLIC PARTICIPATION

### 1. State Legislation

Section 69-4809.1 states in part:

(1) *The department shall:*

(d) *collect and furnish information relating to the prevention and control of water pollution.*

### 2. Past Program

Major accomplishments for the past fiscal year include a series of public involvement workshops held in various Montana communities, the development and airing of a series of TV public service announcements, numerous presentations to civic groups, conservation districts, schools and public service groups, and disbursement of a monthly-bi-monthly newsletter.

208 public participation meetings (developed through local committees) were held in Missoula, Butte, Anaconda, Twin Bridges, Dillon, Fairmont Hot Springs, Sidney, Plentywood, Glendive, Malta, Great Falls and Lewistown. All meetings were well attended by citizens and professional people. Numerous other programs were presented in conjunction with Water Forums about the state.

Public service announcements for TV, illustrating impacts of different pollution sources and benefits of best management practices, have been developed. Three spots have been aired on all networks in Montana since January, 1978. These have had good coverage (with MTN Network alone having a viewing audience of over 600,000). The remaining seven spots will be released before January, 1979. The film, "Man and Water," dealing with water quantity-quality problems on the Big Hole River, Montana was completed and released for distribution in March, 1977.

### 3. Five Year Strategy

A major effort will be made to improve public participation activities within Water Quality Bureau programs, particularly, drinking water, construction grants, and 208 planning programs. A greater public awareness effort, directed at existing and potential water quality problems, is needed to elevate public concern and

interest in public participation programs. The development of local and state educational programs to promote public understanding of water quality problems and solutions and to more clearly define how the general public can effectively respond to local and regional water quality problems will be encouraged and supported.

The ten Public Service Announcements will be televised over the next five-year period on all Montana television stations on a rotating basis. It is hoped that these spots will effect a better public understanding of Montana's water quality problems and their solutions. The spots will reach a viewing audience of approximately 650,000 people annually.

Television talk shows, such as "Face-the-State", will be used more extensively. Articles will be prepared for local newspapers and magazines to improve public awareness. In addition, videotape may be used to provide "live" news of water quality events to television stations.

Disbursement of the Statewide 208 management plan will be a major objective of the Public Participation Program. Those portions of the plan prescribing local implementation will require greater communication between designated local management agencies, the bureau, and the public. Therefore, on-going public participation workshops will continue to be conducted with such agencies as the Conservation Districts to facilitate implementation of the 208 plans.

#### 4. Proposed FY 1979 Plan

A series of area workshops will be conducted to facilitate public review and comment on the draft statewide 208 plan in October-November, 1978.

A special program on water quantity-water quality is scheduled for December, 1978 or January, 1979, on "Face-the-State". It will feature the film "Man and Water" and a panel discussion involving a representative from DNRC, WQB, and agriculture. A special effort will be made to distribute and show "Man and Water" to various public interest groups and communities in Montana during FY 79.

All ten Public Service Announcements will be circulated to television stations in Montana. A proposal will be submitted to EPA to adopt the Montana PSA's for regional use, thereby expanding the Montana viewing audience through cable television use (Salt Lake City television stations).

A series of newspaper and magazine articles on various issues and water quality problems in Montana will be prepared for publication. And, presentations and field trips to service groups, schools, associations, etc., will be continued.

SUMMARY OF BUDGET AND MANPOWER RESOURCES  
AND OUTPUT COMMITMENTS

The manpower and budget summary for fiscal year 1979 presented in Table consists of personnel services, contractual services, supplies and materials, communications, travel, rent, utilities, equipment, repairs, and indirect costs which are associated with federal grants. The bureau maintains three offices - the main office in Helena and branch offices in Kalispell and Billings. The Kalispell and Billings offices are shared with other division personnel. Two persons are located at Kalispell and five at Billings for water quality work. Field laboratories are also maintained at Kalispell and Billings, mainly for analytical work for samples which must be done in a short time period and cannot be shipped to the main laboratory at Helena.

On July 1, 1978, bureau personnel working on water quality analyses were transferred to the Laboratory Division. Six employees were involved in this transfer. The bureau will be assessed a specific fee for each parameter determined on a sample.

The bureau is also responsible for a regulatory program for public water supplies. Its work plan is not included in this program plan, but their budget and manpower resources are shown in Table 7. A separate subdivision bureau was established during fiscal year 1976. Subdivision work was formerly performed by the Water Quality Bureau. Even though the greater portion of their work relates to water pollution control, their manpower and budget spent in this activity is not shown here. Personnel time (about one man-year/year) provided by the Legal Division to the bureau activities is not shown. The Department of Fish and Game has an aquatic biologist working with the Department, and his time is not shown.

The EPA staff transferred to Helena will be replacing an equivalent staff that is working with the Montana program in Denver. Many of the EPA decisions which were formerly made in Denver should now be made in Helena. EPA plans to assign seven people to the Helena office to work in the water program area.

The Water and Wastewater Operators Certification program involves operators in both the water supply and water pollution control fields. The program is administered by the Water Quality Bureau.

The Statewide 208 and Safe Drinking Water Programs require the State to provide 25% of the funds. About \$70,000 is required of state matching funds for the regular water pollution control program (106 program). The bureau has progressively become more dependent on federal funding with State funding remaining about the same during recent years.

Budgeting has become more complex with the changing of the federal fiscal year to October 1 through September 30, while the State budget period remains as July 1 to June 30. The federal budget period is presented in Table 7 ; however, the total budgets for the two (fiscal year) time periods will be fairly similar.

The following sources of funding are anticipated by the bureau for programs which they are administering:

State General Fund -----	\$241,000
Other state agency and local matching funds for Statewide 208 and lakes programs -----	150,000
Operator certification program -----	12,000
EPA water pollution control FY '78 program grant (remaining at end of FY '78)-----	85,000
EPA water pollution control FY '79 program grant -----	359,000
EPA Statewide 208 grant -----	563,000
EPA construction grant administration ---	132,000
EPA public water supply grant -----	264,000
Contractual Studies:	
EPA surface impoundment assessment -----	\$ 40,000
EPA lake assessment -----	100,000
EPA Poplar River assessment -----	10,000
BLM-USGS study of streams draining coal areas ----	27,000
Flathead National Forest Logan Creek study -----	7,000
	<u>184,000</u>
Total	<u>\$1,990,000</u>

TABLE 7. FISCAL YEAR BUDGET AND MANPOWER SUMMARY

	FY 79 Program Grant	208 Grant	205(g) Adminis- tration Grant	State and Local Funds	Total Budget	Man- Years <sup>1</sup>
Municipal Facilities Construction	25,000	10,000	126,000		161,000	6.9
Point Source Permits	125,000				125,000	4.75
Nonpoint Source Implementation	26,000			5,000	31,000	0.9
Water Quality Management Planning	29,000 <sup>2</sup>	430,000		195,000 <sup>2</sup>	654,000	4.3
Ambient and Compliance Monitoring <sup>3</sup>	46,000	75,000		30,000	151,000	3.9
Enforcement <sup>4</sup>	100,000			10,000	110,000	4.5
Training, Operations and Maintenance	26,000		4,000	22,000	52,000	1.15
Public Participation	2,000	31,000	2,000		35,000	1.4
Administration	65,000 <sup>5</sup>	17,000 <sup>5</sup>		10,000	92,000 <sup>5</sup>	1.3
Public Water Supplies				88,000	352,000	7.0
Technical Studies and Inventories <sup>6</sup>				43,000	227,000	2.1
Total	444,000	563,000	132,000	403,000	1,990,000	38.2

<sup>1</sup>Includes only Water Quality Bureau man-years.

<sup>2</sup>Includes water quality standards and Yellowstone River flow reservations work which will be done outside of the Statewide 208 area.

<sup>3</sup>Includes sampling, analyses, and data compilation and storage.

<sup>4</sup>Also includes on-site inspections and plan review.

<sup>5</sup>Includes indirect costs.

<sup>6</sup>Studies and inventories receiving specific funding.